MKA
ECOLOGY

Preliminary Ecological Appraisal

West Hendon Playing Fields, Barnet, London

Site	*West Hendon Playing Fields, Barnet, London*
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Declaration of compliance

This Preliminary Ecological Appraisal has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development”.

The information which we have provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management’s (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Validity of data

Unless stated otherwise the information provided within this report is valid for a maximum period of 24 months from the date of survey. If works at the site have not progressed by this time an updated site visit may be required in order to determine any changes in site composition and ecological constraints.

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1. EXECUTIVE SUMMARY

In March 2018 MKA Ecology Limited was commissioned to undertake a Preliminary Ecological Appraisal of West Hendon Playing Fields. The appraisal included a Phase 1 habitat survey, protected species scoping survey and desktop study of protected and notable sites and species in the area. A site visit was undertaken on 22 March 2018.

The Site consists of a large public space with amenity grassland, broadleaved woodland, scattered trees and dense scrub. A single building is present with an associated car park. There is marginal habitat and a series of ephemeral ponds adjacent to Brent Reservoir SSSI.

The proposed masterplan involves the addition of eleven outdoor facilities with associated extra car parking spaces and cycle tracks and walkways. The majority of the development is proposed to replace amenity grassland, although pathways will be also be built through the woodland and semi-improved grassland, and a small proportion of scattered trees will be removed.

Brent Reservoir (Welsh Harp) (SSSI, LNR and Site of Metropolitan Importance) is contiguous with the eastern and southern part of the Site and it will be required to demonstrate that there are no impacts to the integrity of this site.

It is necessary to consult with Natural England at this juncture to reach consensus on work required to show that there is no impact from the development upon the Brent Reservoir (Welsh Harp) SSSI, LNR and Site of Metropolitan Importance:

As Habitats of Principle Importance, the broadleaved woodland and ponds should be retained as much as possible within the design scheme and any impacts minimised.

Ornithological surveys are required to establish to relationship with the associated SSSI. Suitable habitat is present for important bird assemblages and protected bird species. Breeding bird surveys are recommended between March and July and wintering bird surveys are recommended between October and February which require focus on the relationship between the species assemblage of the SSSI and the development footprint.

Suitable habitat was identified for roosting, commuting and foraging bats. Further assessment is recommended to fully understand the potential impacts on this species group and to guide mitigation measures, to take the form of inspection surveys (any time of year) and activity surveys (between April and September

Suitable terrestrial and aquatic habitat was present on site for great crested newt although there are only four ponds within 500 metres of the site. An eDNA survey of the waterbodies on site is recommended to confirm presence or absence of great crested newt (undertaken between 15 April and 30 June). Should these confirm the presence of this species then population estimate surveys would be required.

Suitable habitat for reptiles in the form of discrete areas of semi-improved grassland and woodland edge was present e. A seven-visit survey is recommended between March and October (ideally during April, May, June or September) to establish presence or absence.

The development is likely to reduce foraging habitat for Hedgehog which heightens the need to maintain access corridors with the masterplan linked through trees and scrub.

The woodland, scrub and hedgerows provide suitable habitat for badger and a disused sett was found during the site visit. On-going monitoring of this sett is required during other surveys and if activity increases a full survey may be required

The potential protected species constraints will require careful and sensitive management in the development process. The presence of important habitats within the Site, and those adjacent to the Site (Brent Reservoir (Welsh Harp) SSSI, LNR and Site of Metropolitan Importance), presents exciting opportunities to create a sustainable development through the creation of a coherent network of ecologically rich habitats, including orchards, ponds and hedgerows. This could help to deliver a highly desirable development whilst also making a significant contribution to green infrastructure in the area.

2. INTRODUCTION

2.1. Aims and scope of Preliminary Ecological Appraisal

In March 2018 MKA Ecology Limited was commissioned to undertake a Preliminary Ecological Appraisal at West Hendon Playing Fields by the London Borough of Barnet.

The aims of the Preliminary Ecological Appraisal were to:

- Undertake a desktop study to identify the extent of protected and notable species and habitats within close proximity of the Site;
- Prepare a Phase 1 habitat map for the Site;
- Identify evidence of protected species/species of conservation concern at the Site;
- Assess the potential impacts of the proposed masterplan;
- Detail recommendations for further survey effort where required; and
- Detail recommendations for biodiversity enhancements.

2.2. Site description and context

The survey area is shown on the map in Figure 1. Within this report this area is referred to as the Site or West Hendon Playing Fields. The site is located in North London (site centred on OS grid reference TQ213879), and falls under the authority of the London Borough of Barnet.

The north and western areas of the Site comprised primarily of amenity grassland with intersecting dense scrub, scattered trees and bordered by hedgerow. A small building and car park are located near the northern entrance to the park. The south and eastern side is dominated by broadleaved woodland. There is a narrow band of swamp habitats on the eastern boundary at the margin of Brent Reservoir.

2.3. Proposed masterplan

The current masterplan proposes significant changes to the current site. The northern corner will be developed to include an Adventurous Play Area, a Multi-Use Games Area, a Toddler Play area, a Community Hub building, an Adventure Golf Course, a Community Garden, a Bowls Green, Tennis courts and an outdoor gym.

The majority of the open amenity grassland will be converted to sports pitches, including two artificial turf pitches. The woodland to the south will be developed to include a High Ropes area and cycle and pedestrian routes across it. A new car park with the capacity for 91 cars is proposed in the south west corner with an adjacent BMX/Skate park.

There are also soft landscaping features proposed across the site which include tree and hedgerow planting, mounding and Water Sensitive Urban Design (WSUDS) negative contours. This report was not produced until the final masterplan was developed.

2.4. Legislation and planning policy

This Preliminary Ecological Appraisal has been undertaken with reference to relevant wildlife legislation and planning policy.

Relevant legislation considered within the scope of this document includes the following:

- The Wildlife and Countryside Act 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2017 (as amended);
- Natural Environment and Rural Communities (NERC) Act 2006;
- The Countryside and Rights of Way (CRoW) Act 2000;
- Protection of Badgers Act 1992; and
- Wild Mammals (Protection) Act 1996.

Further information is provided in Appendix 1, including levels of protection granted to the species considered in Section 3.3.

In addition to obligations under wildlife legislation, the National Planning Policy Framework (NPPF) revised in 2018 requires planning decisions to contribute to conserving and enhancing the local environment. Further details are provided in Appendix 1.

The Barnet London Borough Council has produced an adopted Local Plan which covers a number of policies relating to biodiversity and habitat conservation, including Chapter 17: Biodiversity and Policy DM16: Biodiversity and Policy 2.18 Green infrastructure of the London Plan. The Mayor's Biodiversity Strategy contains several proposals including Proposal 19: which protects and enhances the biodiversity of the Blue-Ribbon Network (The Thames and London's waterways). Where relevant these are discussed in further detail in Section 5.

3. METHODOLOGIES

This Preliminary Ecological Appraisal has been undertaken in accordance with the Chartered Institute for Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017).

3.1. Desktop study

A data search was conducted for the Site and the surrounding area within 2km of the site. The organisations listed in Table 1 were contacted with regard to biodiversity data.

Table 1: Organisations providing biodiversity data

Organisation	Data collected	Date collected
Multi-agency Geographic Information for the Countryside (MAGIC) www.magic.gov.uk	Information on local, national and international statutory protected areas.	07/08/2018
Greenspace Information for Greater London (GiGL)	Information on protected and notable sites and species within 2km of the Site	28/03/18

3.2. Phase 1 habitat survey

The habitat at the Site was surveyed using the standardised Joint Nature Conservation Committee (JNCC) Phase 1 classification and mapping methodology (JNCC, 2010). Data were recorded onto field maps and then transferred onto a Geographic Information System (GIS) following the JNCC Colour Mapping Pallet for ArcGIS. Dominant plant species were observed and recorded within each habitat type. The plant species nomenclature follows that of Stace (2010).

The DAFOR scale is used to describe the relative abundance of species. The scale is shown in Table 2. It is important to note that where a species is described as rare this description refers to its relative abundance within the Site and is not a description of its abundance within the wider landscape. Therefore, a species with a rare relative abundance within the Site may be common within the wider landscape.

Table 2: DAFOR scale

DAFOR code	Relative abundance
D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare

3.3. Protected species scoping survey

As part of the Preliminary Ecological Appraisal of the Site, an assessment of the potential for the habitats on site to support protected or notable species was made. This assessment was based on the quality, extent and interconnectivity of suitable habitats, along with the results of the desktop study detailed in Section 3.1.

Protected species frequently encountered on development sites include the following:

- Amphibians: Great crested newt *Triturus cristatus.*
- Reptiles: Adder *Vipera berus*, common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix helvetica*.
- Birds: All species, with special reference to species listed under Schedule 1 of The Wildlife and Countryside Act 1981 (as amended).
- Mammals: Badger *Meles meles*, bats (all species), European water vole *Arvicola amphibius*, otter *Lutra lutra* and hazel dormouse *Muscardinus avellanarius*.
- Invertebrates: White-clawed crayfish *Austropotamobius pallipes.*

In each case the likelihood of presence of these protected species at the Site was classified as being either high, moderate, low or negligible. These definitions are as follows:

Confirmed: The species is confirmed on the site during the Preliminary Ecological Appraisal, previous survey effort or recent records.

High: Habitats are available onsite which are highly suitable for this species and there are records within the desktop study. The surrounding areas also provide widespread opportunities for the species which are well connected to the Site.

Moderate: Some suitable habitat available on site for the species although not of optimum quality. Species is present with the desktop study.

Low: Some suitable habitat available on site for the species but this is low value and possibly of small scale or with poor connectivity. No, or very few, records returned in the desktop study.

Negligible: No suitable habitat available for the species, or very little poor-quality habitat

In addition to the species listed above, the potential for the Site to support other rare or notable species (or habitats) is also considered. This includes Species and Habitats of Principal Importance as listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006), and Red and Amber listed Birds of Conservation Concern (BoCC) as per Eaton *et al*., 2015 (see Appendix 1).

This protected species scoping survey is designed to assess the *potential* for presence or absence of a particular species or species group, and does not constitute a full survey for these species.

3.4. Surveyors

The survey was undertaken by James Aldridge GradCIEEM, Ecologist at MKA Ecology Limited. James has three years' experience in undertaking Preliminary Ecological Appraisal and holds a Natural England class licence for surveying great crested newt and bats. He was assisted by Felix Bird, Graduate Ecologist at MKA Ecology Ltd.

3.5. Date, time and weather conditions

See Table 3 below for details of the date, time and prevailing weather conditions recording during the site visit for the Preliminary Ecological Appraisal.

Table 3: Date, time and weather conditions of survey visit

Date	Time of survey	Weather conditions*
22/03/18	11:00	Wind: 3 Cloud: 8 Temp: 7°C Rain: No

*Wind as per Beaufort Scale / Cloud cover given in Oktas.

3.6. Constraints

It should be noted that a single visit cannot categorically ascertain the presence or absence of any protected species. However, an assessment is made of the likelihood for protected species to occur based on habitat characteristics and the ecology of each species. Where there is potential for protected species, additional survey work may be required to ascertain their presence or absence.

The assessment was undertaken outside the optimum period of April to the end of September. However, within the scope of the study it was possible to identify key habitats present and assess their likelihood of supporting a greater range of species. Completion of the report was delayed until a final masterplan was submitted for consideration.

Data on species records obtained from local biological records centres are sometimes only available at low spatial resolutions, and are partly constrained by what local residents, recorders or experts have chosen to record in the field and submit as records. Thus, while these records provide a useful indication of species recorded in the local area, in particular protected or notable species, the data is not necessarily an accurate reflection of species assemblages or abundance in the area around the site.

4. RESULTS

4.1. Desktop study

An ecological desktop study was completed for the Site and the surrounding 2km. The data, provided by Greenspace Information for Greater London (GiGL), identified numerous UK and European protected species, Species and Habitats of Principal Importance (as listed under Section 41 of the NERC Act 2006), and species of conservation concern within 2km of the Site. It should be noted that this is not a comprehensive list of the distribution or extent of the local flora and fauna of conservation importance. These species records are discussed in greater detail in the protected species scoping survey section (Section 4.3 below).

Details of statutorily designated sites identified as part of the desktop study are displayed in Table 4 below. These include one Site of Special Scientific Interest (SSSI) and two Local Nature Reserves (LNR)

Table 4: Statutorily designated sites within 2km of West Hendon Playing Fields

Site name	Area (ha)	Distance and direction	Reasons for selection
Barnet Reservoir (Welsh Harp) SSSI	68.6	0m, E	• Primarily designated for supporting breeding wetland birds, in particular nesting great crested grebe *Podiceps cristatus* • Supports a wide range of waterfowl in winter. Maximum counts of pochard *Aythya ferina* and gadwall *Anas strepera* occasionally reach national significance and wintering waders include snipe *Gallinago gallinago* and jack snipe *Lymnocryptes minimus.* • The surrounding wetlands are also of interest for their plant communities including water-plantain *Alisma plantago-aquatica* and flowering rush *Butomus umbellatus*
Barnet Reservoir (Welsh Harp) LNR	97.1	0m (on Site)	• Same criteria as for the above SSSI designation

Site name	Area (ha)	Distance and direction	Reasons for selection
Fryent Country Park LNR	107.0	860m W	• The largest area of countryside in the London Borough of Brent and the only surviving area of traditional countryside of the Upper Brent Basin area of Middlesex. • Includes over 10km of hedgerow and over 50Ha of hay meadow, rough grassland and small areas of old acid grasslands • Supports uncommon species including the nationally rare narrowleaf bittercress *Cardamine impatiens.*

Details of non-statutorily designated sites identified as part of the desktop study are displayed in Table 5 below. These include 15 Sites of Importance for Nature Conservation (SINCs). Sites of Importance for Nature Conservation (SINCs) are recognised by the Greater London Authority and London borough of Barnet as important wildlife sites. There are three tiers of sites:

- Sites of Metropolitan Importance
- Sites of Borough Importance (Borough I and Borough II)
- Sites of Local Importance

The data search also returned one Candidate Locally Important Geological Site (LIGS) 1.5km west of the Site. It is beyond the remit of this ecological report to predict any impacts upon this LIGS and is therefore not considered further.

Table 5: Non-statutorily designated sites within 2km of West Hendon Playing Fields

Site name	Area (ha)	Distance and direction	Reasons for selection
Brent Reservoir (Welsh Harp) (Site of Metropolitan Importance).	104.4	0m SE	• One of London's largest lakes, supports one of the largest nesting colonies of great crested grebe in Britain. • Important invertebrate fauna supported by the wetland and drier habitats including over 40 nationally rare species, including longhorn beetle *Phytoecia cylindrica*.

Site name	Area (ha)	Distance and direction	Reasons for selection
Fryent County Park (Site of Metropolitan Importance)	110	860m W	• Supports unimproved hay meadows comprising abundant meadow brome *Bromus commutatus* and a substantial population of the locally rare great burnet *Sanguisorba officinalis*. • Primarily managed for nature conservation
Quainton Street Open Space (Site of Borough Grade I Importance)	5.35	1.3km SW	• A section of the River Brent which is bordered by steep, heavily-wooded banks. • Supports emergent and marginal vegetation including alder Alnus glutinosa, common water plantain *Alisma plantago-aquatica* and pendulous sedge *Carex pendula*.
Old St Andrew's Churchyard, Kingsbury (Site of Borough Grade I Importance)	1.67	650m SW	• An old church yard containing many mature trees including pedunculated oak *Quercus robur*, ash *Fraxinus excelsior* and horse chestnut *Aesculus hippocastanum* • Due to the shading the ground flora includes wood woundwort *Stachys sylvatica*, violets *Viola spp*. and a number of locally scarce sedges including grey sedge *Carex divulsa*.
Silk Stream and Burnt Oak Brook (Site of Borough Grade II Importance)	8.71	210m NE	• An urban river system, the banks are often restrained by wood or concrete, however throughout its length there are narrow strips of scrub and grassland forming a valuable green corridor. • Grey wagtails *Motacilla cinerea* are often present
Gladstone Park (Site of Borough Grade II Importance)	27.24	1.6km S	• Contains an ornamental pond surrounded by marginal vegetation including lesser reedmace *Typha angustifolia* and reed canary-grass *Phalaris arundicaea.* • Contains an area of uncut grassland supporting abundant red fescue *Festuca rubra* and yellow oat-grass *Trisetum flavescens* and sheep's sorrel *Rumex acetosella* are found.

Site name	Area (ha)	Distance and direction	Reasons for selection
Harp Island (Site of Borough Grade II Importance)	1.79	790 SW	• Comprises a stretch of the River Brent which is an open culvert • Supports marginal vegetation including water plantain *Alisma plantago-aquatica*, reed canary-grass *Phalaris aundinacea* and greater pond-sedge *Carex riparia*. • Exposed shingle and alluvium banks provide feeding areas for wading birds
Grange Roundabout Nature area (Site of Borough Grade II Importance)	0.24	1.3km SW	• A roundabout with constant traffic surrounding it, containing a lined pond, wildflower seeded grassland and screening scrub and trees • The pond is dominated by great reedmace *Typha latifolia* and includes yellow iris *Iris pseudacorus*. • The grassland originates partly from a seed mixture and partly from natural colonisation. Supports common knapweed *Centaurea nigra* and greater knapweed *Centaurea scabiosa* and as well as salad burnet *Sanguisorba minor*.
Roe Green Park (Site of Borough Grade II Importance)	15.76	980m NW	• Largely comprises amenity areas. • Contains a brick pond, a wildlife pond, log-piles and nest boxes. • A nature area of the park contains a mix of native and non-native trees, and the understorey vegetation is allowed to grow long. • Supports tufted hair-grass *Deschampsia cespitosa*, creeping bent *Agrostis stolonifera* and meadow fox-tail *Alopecurus pratensis*.

Site name	Area (ha)	Distance and direction	Reasons for selection
Dollis Hill Reservoir (Site of Borough Grade II Importance)	3.09	1.5km SW	• A covered reservoir supporting semi-improved neutral grassland containing salad burnet *Sanguisorba minor*, lucerne *Medicago sativa* and common knapweed • A fenced off area of woodland lies to the south of the reservoir and is dominated by sycamore *Acer pseudoplatanus*, ivy *Hedera helix* and bramble *Rubus fruticosus agg*.
Clarefield Park (Site of Local Importance)	2.04	1.5km E	• A small park comprising amenity grassland with a pond and some semi-improved neutral grassland • It is likely frogs and newts breed in the pond
Hendon Park and Northern Line Railway Cutting (Site of Local Importance)	14.71	1.6km E	• A large park comprising amenity grassland with hedgerows and scattered trees • The rail side vegetation comprises rough grassland and patches of woodland
Meadow Way Copse (Site of Local Importance)	0.13	630m NW	• Contains a small area of trees including mature pedunculated oaks *Quercus robur* • Understorey includes wood avens *Geum urbanum*, ground ivy *Glechoma hederacea* and cherry laurel *Prunus laurocerasus* is common.
Grove Park and Tramway Brook (Site of Local Importance)	0.47	1.7km E	• Contains a small park which is predominately amenity grassland • Tramway Brook forms a polluted tributary of the Silk Stream, with its banks supporting nettle, cow parsley *Anthriscus sylvestris* and black horehound *Ballota nigra*
Kingsbury Road bank (Site of Local Importance)	0.2	430m NW	• A south – facing bank providing aesthetic value. • Contains hawthorn, blackthorn and immature yew *Taxus baccata*, as well as hoary mustard *Hirschfeldia incana*, bittersweet *Solanum dulcamara* and Japanese rose *Rosa rugosa*

The Site is surrounded on the northern and south-western sides by residential buildings. Silver Jubilee Park, which is predominantly amenity grassland, is adjacent to the north-western side of West Hendon Park. To the immediate south are the West Hendon allotments and Welsh Harp Open Space, which contains a mix of amenity grassland, belts of woodland and hedgerows. Brent Reservoir is adjacent to the eastern boundary of the Site and runs to the south.

The wider landscape consists of suburban London. A major road, the A5, lies parallel with the eastern boundary of the site, at approximately 180m distance. Fryent Country Park is the largest area of nearby greenspace, at 860m distance, containing a mix of hay meadows, woodland and a network of hedgerows, however it is isolated from the site by residential buildings.

4.2. Phase 1 habitat survey

The Site was found to comprise primarily amenity grassland in the north and broad-leaved woodland in the south and east. Brent reservoir is adjacent to the eastern boundary and swamp habitats including willow carr are present. A building and car park are located at the northern entrance to the park. More detailed species lists, along with their relative abundance, can be found in Appendix 2Full text is available at: https://www.gov.uk/government/collections/revised-national-planning-policy-framework

A revised NPPF was published on 24 July 2018 setting out the Government's planning policies for England and the process by which these should be applied. The policies within the NPPF are a material consideration in the planning process. The key principle of the NPPF is a presumption in favour of sustainable development, with sustainable development defined as a balance between economic, social and environmental needs.

Policies 170 to 183 of the NPPF address conserving and enhancing the natural environment, stating that the planning system should:

- Contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes;
- Recognise the wider benefits of ecosystem services; and
- Minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

Furthermore there is a focus on re-use of existing brownfield sites or sites of low environmental value as a priority, and discouraging development in National Parks, Sites of Specific Scientific Interest, the Broads or Areas of Outstanding Natural Beauty other than in exceptional circumstances.

Where possible, planning policies should also

"promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity".

Appendix 2. The Phase 1 habitat survey map is provided in **Figure 1**, at the end of this section. Descriptions of the habitat types present along with dominant species compositions are provided below.

Amenity grassland

A large area of the site was used as public open space and sports pitches with amenity grassland (Photograph 1, Appendix 3). This is dominated by perennial rye-grass *Lolium perenne* with frequently occurring white clover *Trifolium repens* and daisy *Bellis perennis*. The sward length was maintained at a very short height.

Broadleaved woodland

The southern and eastern sides of the site contained broadleaved woodland, which comprised mainly immature to semi-mature trees (Photograph 2, Appendix 3). Frequently occurring tree species included ash *Fraxinus excelsior*, alder *Alnus glutinosa* and willow *Salix sp*. and the understorey contained abundant bramble *Rubus fruticosus agg.* with occasionally occurring lords-and-ladies *Arum maculatum*.

In the north east corner of the Site, where the Silk Stream joins Brent Reservoir, a willow carr habitat was present. This habitat comprised a wet woodland with numerous ponds and was dominated by willow.

Semi-improved grassland

Small patches of semi-improved grassland were scattered across the Site, with the largest area located towards the centre (Photograph 3, Appendix 3. Cock's-foot *Dactylis glomerata* was abundant and Yorkshire fog *Holcus lanatus* was also frequently occurring. The sward allowed to grow and was approximately 50cm.

Hardstanding

There was a small area of hardstanding associated with the car park in the north of the Site (Photograph 4, Appendix 3) and a few walkways surrounding the building.

Buildings

A single building was present in the north of the Site (Photograph 5, Appendix 3). The building was single-storey and brick-built, with a flat roof. It was considered to have low bat roost potential due to gaps between the wooden boards on the roof.

Dense scrub

This habitat type was present across the site and was dominated by bramble (Photograph 6, Appendix 3). The dense scrub was unmanaged but limited by management of adjacent amenity grassland areas.

Ponds

There was a minimum of 6 ponds present by the margin of the reservoir and in the willow carr woodland at the time of survey (Photograph 7, Appendix 3). These varied in size from 12m^2 to 100m^2 and tended to be heavily shaded due to their location within woodland. They appeared to be ephemeral and the survey was undertaken at a time of high water levels following a wet winter. Due to the likely short-lived nature of these ponds, very little vegetation specific to this habitat was present.

Marginal vegetation

This habitat type was present on the eastern border of the Site on the banks of Brent Reservoir (Photograph 8, Appendix 3). It contained abundant great reedmace *Typha latifolia* and willowherb *Epilobium sp*. as well as occasionally occurring yellow flag iris *Iris pseudacorus.*

Introduced shrubs

A few introduced shrubs were present around the building and included species of the *Mahonia* genus (Photograph 9, Appendix 3).

Species-poor hedgerows

This habitat type bordered the Site, acting as a barrier from the car park and bowling green (Photograph 10, Appendix 3). It contained abundant hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*. The hedgerows surrounding the car park and bowling green were regularly maintained and shaped, whereas those bordering the site were less actively maintained and often contained trees such as oak *Quercus sp*.

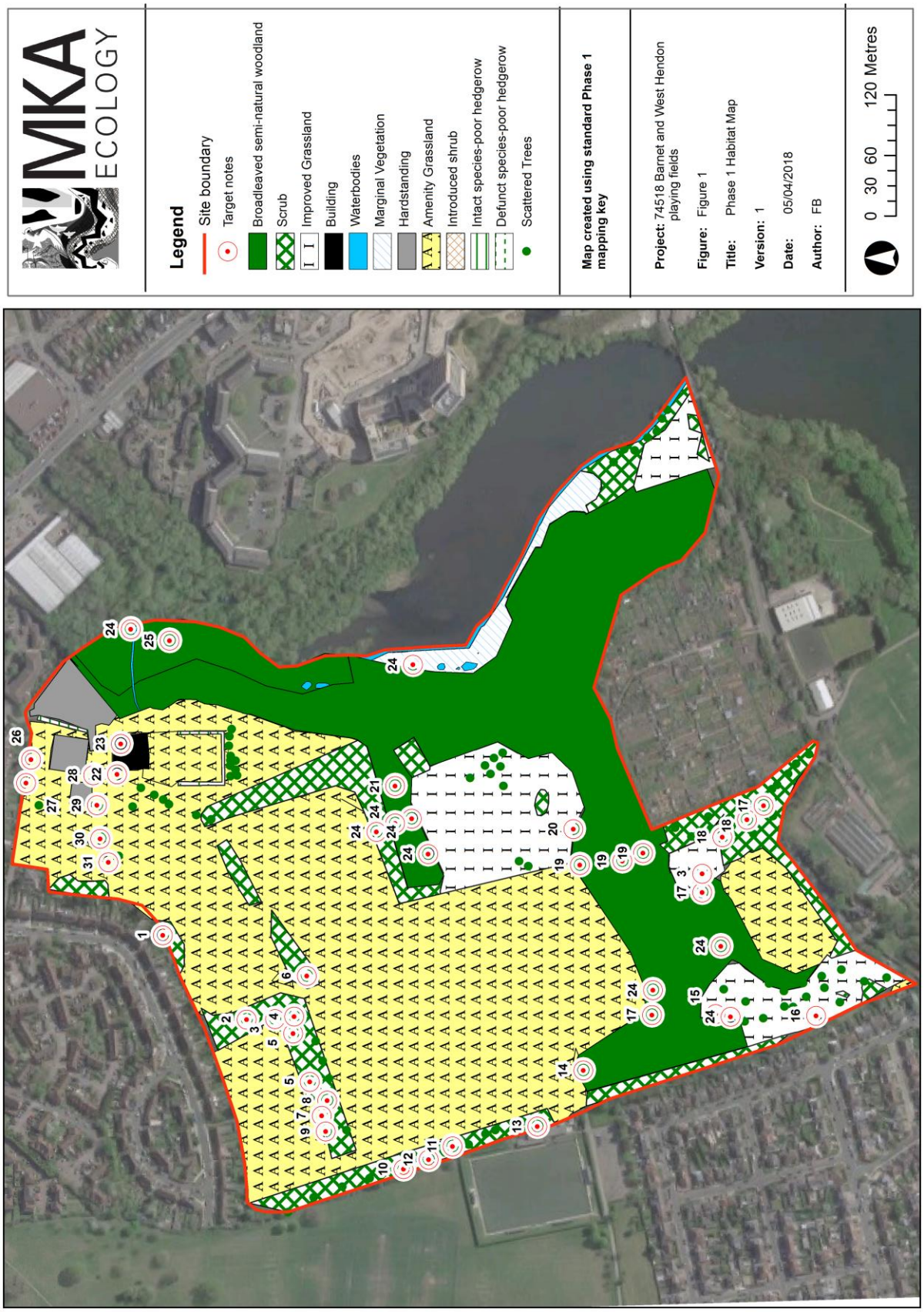
Scattered trees

There was a large number of scattered trees across the site, amongst the scrub, lining the walkways and within the grassland (Photograph 11, Appendix 3). The trees varied in age and included mature and standing dead wood. The tree species on site included abundant oak *Quercus sp*. and frequently occurring ash.

Stream and wet ditches

As well as the Silk Stream to the north east of the Site, there was one small stream and two wet ditches present.

Figure 1: Phase 1 habitat map of West Hendon Playing Fields



Target notes

TN01. Cherry laurel– listed on the London Invasive Species Initiative

TN02. Small but mature oak with knotholes and cracks; low bat roost suitability

TN03. Dense and taller more continuous scrub – valuable section for house sparrow and likely small mammals etc.

TN04. Mature oak which is dead in parts with cracks and hollow; low bat roost suitability

TN05. Tall poplar, suitable for nest boxes

TN06. Mature oak with crack from zero to four metres height, south aspect – no bat roost suitability, but a three-metre hole in cut limb has bat roost suitability

TN07. Mature oaks (three in line)

TN08. Row of semi-mature London plane trees

TN09. Oak with several knotholes; high bat roost suitability

TN010. Mammal track leads into scrub (not to species, no discernible tracks)

TN011. Badger sett: One partially used entrance and two disused entrances

TN012. Rabbit warren

TN013. Two mature oak and one mature ash

TN014. Mature oak with woodpecker hole at six metres on the north aspect, leading to cavity; bat roost suitability

TN015. Small patch of tussocky semi-improved grassland, suitable for reptiles

TN016. Two wooden bird boxes by footpath

TN017. Holes in soil from mammal digging

TN018. 14 mature oak trees set in scrub with various cracks; bat roost suitability

TN019. Two oaks and one ash. Mature trees with bat roost suitability

TN020. Ant hills

TN021. Log pile

TN022. Mature oak

TN023. Gap in wooden panels; low bat roost suitability

TN024. Giant hogweed – Schedule 9 invasive species

TN025. Willow carr habitat

TN026. Rhododendron- listed on the London Invasive Species Initiative

TN027. Oak adjacent to site boundary with low bat roost suitability

TN028. Mature pedunculate oak which is hollow and has knothole leading to cavity. Four metres high on western aspect; medium bat roost suitability

TN029. Mature pedunculate oak with a crack in limb at three metres

TN030. Mature pedunculate oak with knot hole at five metres on east side, unlikely to lead to a cavity but impossible to rule out from ground level. One woodpecker hole at four metres on western aspect leading to cavity, with staining below. One knothole leading to cavity on western side. High bat roost suitability

TN031. Mature oak two knotholes at three metres, northern aspect, leading to cavity.

4.3. Protected species scoping survey

Plants

The data search returned numerous records of Nationally Scarce and Nationally Rare plants within 2km of the Site. These included species listed under Schedule 8 of the Wildlife and Countryside Act (1981) (as amended) (bluebell *Hyacinthoides non-scripta),* Section 41 of the NERC Act (2006) (red hemp-nettle *Galeopsis angustifolia*), UK and London Biodiversity Acton Plans, those listed as Nationally Rare and Scare and Local Species of Conservation Concern.

No plants listed in the data search were found on site, although the assessment was undertaken in a sub-optimal time of year, and so some species may not have been apparent. The locally uncommon species known to be present on the Brent Reservoir margins were not recorded, however a full botanical survey was not undertaken. The majority of the site comprised of amenity grassland which is unlikely to support any notable species. As such, the likelihood of notable species being present is considered to be **low**.

Giant hogweed *Heracleum mantegazzianum,* a species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and the London Invasive Species Initiative (LISI), was recorded as **present** across the site (Target note 25, Figure 1). Cherry laurel *Prunus laurocerasus* and rhododendron *Ericaceae sp*., both listed on LISI, were also present on site (Target note 01 and 27, Figure 1). No sign of Himalayan balsam was evident; however, it has been recorded in the Silk stream (adjacent to the north-east boundary of the Site), and would not have been growing at the time of the site visit.

Invertebrates

Numerous invertebrate species were returned from the data search within 2km, including species listed on Section 41 of the NERC Act (2006), local and national Biodiversity Action Plan species and Cambridgeshire and Peterborough Additional Species of Interest

The scattered mature and dead trees, woodland and marginal habitats provides suitable habitat for a diversity of invertebrates. However, these habitats are not predicted to be significantly changed under proposed design scheme. Therefore, it is considered there is a **negligible** risk of notable invertebrate species being impacted by development. This species group is not considered further within this report.

Amphibians

The data search returned 353 records of common frog *Rana temporaria* with a maximum single count of 400 individuals. 74 records of common toad *Bufo bufo* were returned, as was one of palmate newt *Lissotriton helveticus* and one of great crested newt *Triturus cristatus*.

At least six waterbodies were identified on site. They were located along the eastern boundary, adjacent to Brent reservoir and the Silk stream. They varied in size from 12m^2 to 100m^2, and were likely ephemeral in nature, either drying out or periodically inundated by the reservoir. The woodland on site offers suitable terrestrial habitat for amphibians and there are many log piles present. A Habitat Suitability Index was carried out on three of the ponds to assess their suitability for supporting the specially protected GCN and they returned scores between “average” and “poor”.

During the terrestrial stage of their life cycle, great crested newt is known to form meta-populations between ponds and migrate from their breeding ponds to suitable habitat for hibernation. The majority of great crested newts remain within 250m of their breeding pond, however they are known to migrate up to 500m (Langton, 2001). As such, best practice guidelines recommend all waterbodies within 500m of a Site are considered.

An Ordnance Survey map and aerial photographs were consulted for the presence of other waterbodies within 500m of the Site boundary. Four waterbodies (excluding Brent reservoir) and a few wet drains were identified within 500m of the site (Figure 2). One of the ponds is located north of the site and is separated by buildings and roads which would act as a barrier to migration. Three ponds are located south of the Site. They are surrounded by high quality terrestrial habitat and are separated from the site by a busy, small road (Cool Oak Lane). Brent reservoir is extremely unlikely to support great crested newt due to its size and population of wildfowl and fish.

Overall the likelihood of the site to support this species group is considered to be **low to moderate**.

Reptiles

The data search returned eight occurrences of slow worm, one occurrence of grass snake and one occurrence of common lizard. The closest records were located 787m SW of the Site, and the intervening habitat consists of grassland, woodland and hedgerows – all of which provide suitable habitats for migration. The woodland and semi-improved grassland present on-site are considered to provide suitable habitat to support these common reptile species. The wetland habitats provide additional foraging habitat for grass snake.

Overall the likelihood of the site to support this species group is considered to be **moderate** to **high**.

Birds

A total of 44 species were recorded during the site visit. These species are shown in Table 6 together with their conservation status. It is important to note that this is not a full inventory of species for the site but opportunistic records.

Table 6: Bird species recorded during site visit at West Hendon Playing Fields

Common name	Systematic name	S1 W&CA[1]	BoCC[2] Status	S41 SPI[3]	Local PrSp[4]
Mute swan*	*Cygnus olor*	No	Amber	No	No
Canada goose*	*Branta canadensis*	No	Green	No	No
Gadwall*	*Anas strepera*	No	Amber	No	No
Teal*	*Anas crecca*	No	Amber	No	No
Mallard*	*Anas platyrhynchos*	No	Amber	No	No
Shoveler*	*Anas clypeata*	No	Amber	No	No
Pochard*	*Aythya ferina*	No	Red	No	yes
Tufted duck*	*Aythya fuligula*	No	Green	No	No
Cormorant*	*Phalacrocorax carbo*	No	Green	No	No
Grey heron	*Ardea cinerea*	No	Green	No	No
Little grebe*	*Tachybaptus ruficollis*	No	Green	No	No
Great crested grebe*	*Podiceps cristatus*	No	Green	No	No
Moorhen*	*Gallinula chloropus*	No	Green	No	No
Coot	*Fulica atra*	No	Green	No	No
Black-headed gull	*Chroicocephalus ridibundus*	No	Amber	No	No
Common gull	*Larus canus*	No	Amber	No	No
Herring gull	*Larus argentatus*	No	Red	Yes	No
Feral pigeon	*Columba livia*	No	Green	No	No
Woodpigeon	*Columba palumbus*	No	Green	No	No
Green woodpecker	*Picus viridis*	No	Green	No	No

Common name	Systematic name	S1 W&CA[1]	BoCC[2] Status	S41 SPI[3]	Local PrSp[4]
Great spotted woodpecker	*Dendrocopos major*	No	Green	No	No
Ring-necked parakeet	*Psittacula krameri*	No	Green	No	No
Magpie	*Pica pica*	No	Green	No	No
Jay	*Garrulus glandarius*	No	Green	No	No
Carrion crow	*Corvus corone*	No	Green	No	No
Blue tit	*Cyanistes caeruleus*	No	Green	No	No
Great tit	*Parus major*	No	Green	No	No
Coal tit	*Periparus ater*	No	Green	No	No
Cetti's warbler	*Cettia cetti*	Yes	Green	No	No
Long-tailed tit	*Aegithalos caudatus*	No	Green	No	No
Chiffchaff	*Phylloscopus collybita*	No	Green	No	No
Reed warbler	*Acrocephalus scirpaceus*	No	Green	No	No
Wren	*Troglodytes troglodytes*	No	Green	No	No
Starling	*Sturnus vulgaris*	No	Red	Yes	No
Blackbird	*Turdus merula*	No	Green	No	No
Song thrush	*Turdus philomelos*	No	Red	Yes	yes
Mistle thrush	*Turdus viscivorus*	No	Red	No	No
Robin	*Erithacus rubecula*	No	Green	No	No
Dunnock	*Prunella modularis*	No	Amber	Yes	No
House sparrow	*Passer domesticus*	No	Red	Yes	No
Pied wagtail	*Motacilla alba*	No	Green	No	No
Chaffinch	*Fringilla coelebs*	No	Green	No	No
Bullfinch	*Pyrrhula pyrrhula*	No	Amber	Yes	yes
Goldfinch	*Carduelis carduelis*	No	Green	No	No

[1] Schedule 1 of The Wildlife and Countryside Act 1981 (see Appendix 1)
[2] Birds of Conservation Concern (see Appendix 1)
[3] Section 41 (NERC Act 2006) 'Species of Principal Importance' (see Appendix 1)

[4] Local Priority Species
*Observed on Brent reservoir from the site

A large number of species were returned within the data search of the site and surrounding 2km. These included species list listed on Annex 1 of the Birds Directive, Schedule 1 of the Wildlife and Countryside Act 1981, Section 41 of the NERC Act, UK and local Biodiversity Action Plans, and birds listed as Amber or Red on the IUCN Red list.

Several of these species records including Schedule 1 listed garganey *Anas querquedula*, scaup *Aythya marila*, bittern *Botaurus stellaris*, black tern *Chilidonias niger* and whooper swan *Cygnus cygnus* will have originated from the adjacent Brent reservoir as it is the only suitable habitat in the surrounding 2km. The marginal vegetation on site surrounding Brent Reservoir only accounts for a very small proportion of the Site, however it has the potential to support some of these rarer and protected species. During the site visit, a Cetti's warbler *Cettia cetti* (listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)) was heard singing. The willow carr surrounding Brent Reservoir is known to support notable breeding species such as BoCC Red listed lesser redpoll *Carduelis cabaret* as well as BoCC Amber Listed bullfinch *Pyrrhula pyrrhula* and reed bunting *Emberiza schoeniclus*. The high number of great crested grebe *Podiceps cristatus* breeding in the marginal vegetation of Brent reservoir is of particular significance, forming the largest colony in London and amongst the largest in Britain and forms the primary reason for its SSSI designation.

Some notable and protected species identified in the desktop study will use the habitats on site during the winter period and it's possible the grassland may provide crepuscular and nocturnal foraging for over-wintering wildfowl on Brent Reservoir.

The site contains a wide range of suitable breeding bird habitats in the form of broad-leaved woodland, scrub, mature scattered trees, buildings and marginal vegetation. Overall the likelihood of the Site supporting breeding birds is **high** and the likelihood to support protected species is **high**.

Bats

The data search returned records of four bat species including common pipistrelle *Pipistrelle pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule bat *Nyctalus noctula* and brown long-eared bat *Plecotus auritus*. A number of unidentified Pipistrellus species were also recorded within 2km of the Site. MAGIC Map was also consulted for records of any European Protected Species licences for known bat roosts within the area and no records were returned.

The site contains foraging habitat in the form of woodland and hedgerows and the adjacent Brent reservoir provides a wider variety of suitable foraging habitat. The woodland, hedgerows and Brent reservoir also provide suitable commuting routes to connect the Site to the wider greenspace of the Welsh Harp Open Space.

There are numerous mature scattered trees and trees within the woodland which are considered to have potential to support roosting bats, due to cracks, crevices and knotholes. The building on site is also considered to have low suitability to support bat roosts due to a gap in the wooden panelling on the roof. The likelihood of bats being present on Site is considered to be **high**.

Badgers

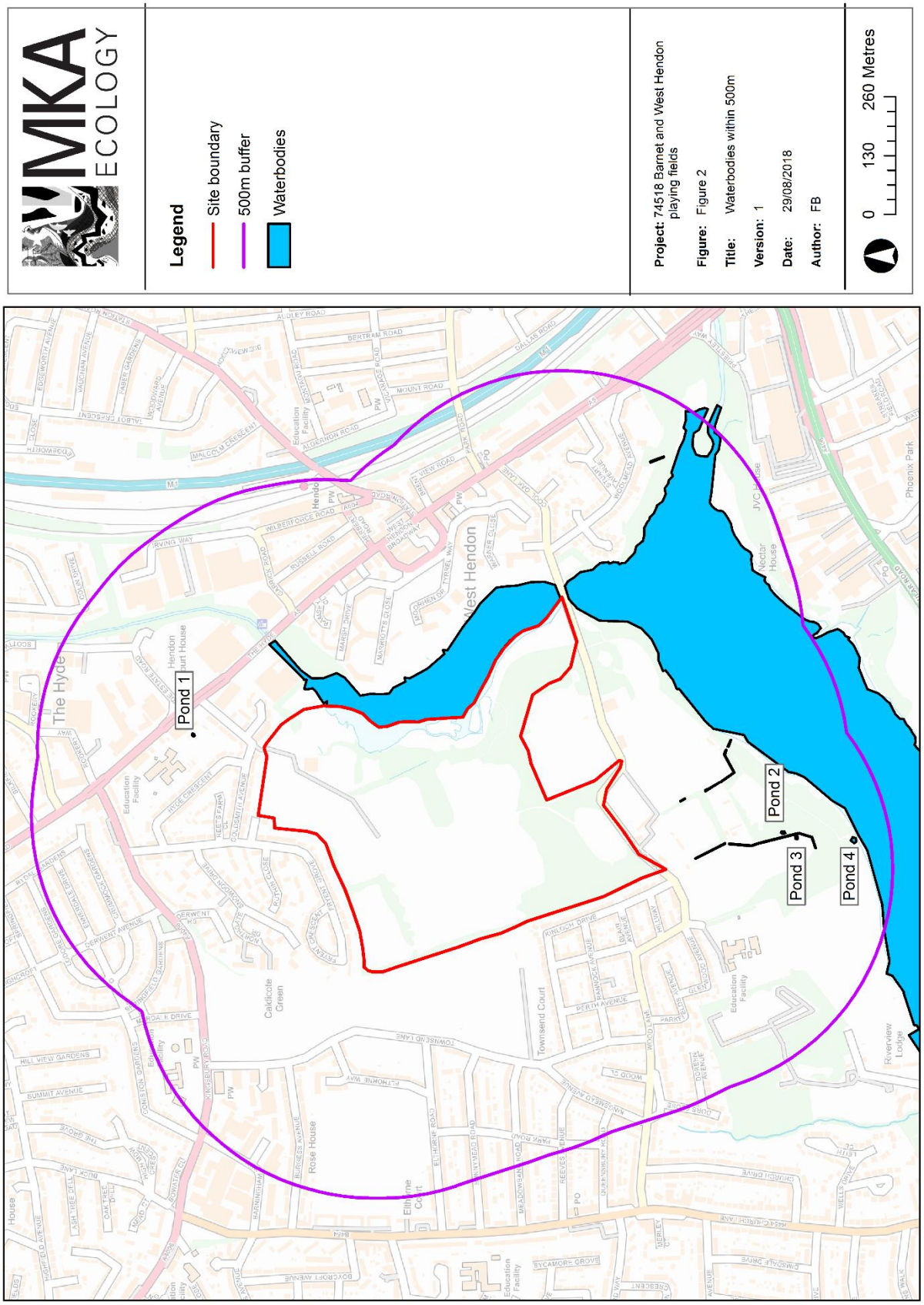
No records of badger were returned from the data search. A disused sett, consisting of two disused holes and one partially used hole, was found on the western border of the site. It had not been used for some time, and the spoil heaps had been colonised by ruderal vegetation. No badger hair, footprints or latrines were found; however, a full badger survey was not completed. The woodland, dense scrub and hedgerows offer suitable foraging habitat. The likelihood of badger being present on site is considered to be **low**.

Other mammals

There were 23 records of West European hedgehog returned from the data search, with the closest record located 251m north of the Site. The woodland has the potential to provide foraging and nesting habitat for hedgehog. Overall, the likelihood of this species being present on site is considered to be **high**.

No records of water vole were returned from the data search, however the Silk stream, wet diches and streams present on site provide some suitable habitat. Overall the likelihood of water vole being present on side is considered to be **low**.

Figure 2: Waterbodies within 500m of West Hendon Playing Fields



5. ECOLOGICAL CONSTRAINTS, OPPORTUNTIES AND RECOMMENDATIONS

This section outlines key ecological issues for consideration, recommendations for further work and ecological enhancements where appropriate.

Off-site habitats

Three statutorily-designated sites and 15 non-statutorily designated sites are located within 2km of West Hendon Playing Fields. Whilst the majority of these sites are unlikely to be directly or indirectly impacted due to their distance from the Site and type of developments proposed, Brent Reservoir (Welsh Harp) SSSI, LNR and Site of Metropolitan Importance overlaps the site boundary and will be directly and indirectly impacted by the proposed masterplan.

The LNR and SINC will directly be impacted by the proposed developments in the woodland and all three designated sites will be affected by the proposed cycle and pedestrian routes. During construction of these developments, indirect impacts include increased noise, lighting and activity levels which could affect species present or those that interact with them. There is also the risk of accidental damage.

These indirect impacts during construction are also likely to be significant post development, with an increase in number of visitors, and availability of evening facilities affecting noise and activity levels whilst lighting will increase which could spill onto the protected areas or affect behaviour of wildlife within it.

The Site falls within the Impact Risk Zone (IRZ) for the SSSI. Impact Risk Zones indicate the area around a SSSI within which development may potentially impact upon the features for which the SSSI is designated. The impact risk zone is designed to alert local planning authorities to the need to consult Natural England and *do not necessarily pre-determine that an impact will occur*. Nevertheless, it is crucial to reach consensus with these key bodies at this stage so that there is an agreed way forward. Thus, consultation with the relevant statutory bodies, notably Natural England and the Local Authority is required to ascertain their recommendations and concerns. It is likely that thorough surveys will be required to understand the relationship between Brent Reservoir (Welsh Harp) and the Site to ensure the ecological integrity of the SSSI, LNR and Site of Metropolitan Importance is not compromised. Recommendations 2-7 below have tried to anticipate this, but consultation, if necessary via the Natural England Discretionary Advice Service is now required at this juncture to reach consensus on impact assessment methods and concerns.

Recommendation 1

Undertake a consultation with Natural England and the Local Authority regarding Brent Reservoir (Welsh Harp) SSSI, LNR and Site of Metropolitan Importance to agree key issues and baseline requirements for further survey. If necessary, this may require consultation through the Natural England Discretionary Advice Service

On-site habitats

A majority of the Site comprised habitats considered to be common and widespread within the surrounding landscape. These habitats included amenity grassland, scrub, and hardstanding.

The broadleaved woodland and ponds (covered by Brent Reservoir (Welsh Harp) LNR and Site of Metropolitan Importance) are Habitats of Principle Importance listed on Section 41 of the NERC Act (2006). The hedgerows present on site are species-poor and so unlikely to qualify under Habitats of Principal Importance criteria, however they offer an opportunity for ecological enhancement and as such should be retained within the final site design. Heras fencing should be used to protect these habitats from accidental damage.

Recommendation 2

Protect and retain the woodland, hedgerows and ponds on site.

Plants

As the majority of the site comprises amenity grassland or immature woodland, the likelihood of protected species being present is negligible in these areas. However, the marginal habitat within Brent Reservoir could potentially support several of the notable species returned from the data search including marsh dock *Rumex palustris* and marsh willowherb *Epilobium palustre*.

No impacts are currently predicted upon the marginal vegetation and as such no further survey work is required.

Giant hogweed is present and is listed on Schedule 9 of the Wildlife and Countryside Act 1981. It is an offence to plant or cause this plant to spread in the countryside and all waste containing these plants come under the control of Part II of the Environmental Protection Act 1990. Giant hogweed was found to be present across the site (Target note 25, Figure 1) and will require careful management during works in order to prevent further spread into the wild. Cherry laurel and rhododendron, both species listed on the London Invasive Species Initiative (LISI), are also present on site (Target note 01 and 27, Figure 1). An invasive species specialist will be required to assess and provide eradication measures for these plants.

Although the survey was undertaken in a suboptimal time for detecting Himalayan balsam, the data search returned eleven records of its presence, with the nearest located approximately 400m north of the Site from the Silk Stream. Himalayan balsam uses watercourses for dispersal and as such, it could be present in the willow carr habitat on Site, where the Silk Stream joins Brent Reservoir. As the site visit was undertaken in March, it will not have been readily visible. Himalayan balsam is also listed on Schedule 9 of the Wildlife and Countryside Act 1981.

Therefore, it is recommended a Himalayan balsam survey should be undertaken during July/August to confirm the presence or absence.

Recommendation 3

Consult an invasive species specialist to control the giant hogweed on-site. The cherry laurel and rhododendron should also be removed.

Recommendation 4

Undertake a Himalayan balsam survey to confirm its presence or absence.

Amphibians

The likelihood of great crested newt is being present on Site is considered to be moderate due to the extensive high-quality terrestrial habitat available, and suitable ponds. It is likely the masterplan's developments will impact upon the woodland. As such, it is possible that construction may result in newts being disturbed, injured or killed.

Great crested newts are protected under 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) (see Appendix 1).

It is recommended an eDNA survey is carried out on the ponds on Site to determine the presence or absence of great crested newt and establish potential impacts on these species. The survey window for eDNA surveys is between 15 April and 30 June each year. This method is recommended as a more efficient means of establishing presence /absence as we consider it is more likely, on balance, that this species is not present. However, should the eDNA survey confirm a presence, further surveys will be required to establish a population estimate

Recommendation 5

Undertake eDNA surveys of the ponds on site to determine the presence or absence of great crested newt. If Presence is confirmed further surveys will be required, though presence is considered a less likely scenario.

Reptiles

Suitable habitat for reptiles (common lizard, grass snake and slow-worm) is present on the Site, such as semi-improved grassland and woodland, though areas of amenity grassland are unsuitable for reptiles. Impacts on reptiles are possible through clearance of vegetation and construction activities, as well as longer term habitat loss. Reptiles are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (see Appendix 1), and are listed as Species of Principal Importance under the NERC Act (2006).

Survey work is recommended in order to determine the presence or absence of reptiles and establish potential impacts on these species. These surveys should be carried out using artificial cover objects (on or under which reptiles can bask) in the active season which runs from March to October. The optimum survey times are in April, May and September. Seven visits should be conducted during suitable weather conditions according to guidance published by Froglife (1999).

Recommendation 6

Undertake a presence or absence survey for reptiles at West Hendon Playing Fields unless it can be established that the areas of semi-improved grassland and woodland edge will not be disturbed during construction or development works

Birds

A total of 44 bird species were recorded during the Preliminary Ecological Appraisal. Most of the habitats at the Site have the potential to provide nesting habitat for birds, in particular the woodland, marginal vegetation, hedgerows and scrub.

Impacts on breeding and over-wintering birds are possible through habitat loss, construction activities and indirectly through increased visitors. The Site has the potential to support important assemblages of breeding and over-wintering birds, including priority species. There is a high risk of the Site supporting breeding species listed on Schedule 1 of the Wildlife and Countryside Act (1981), such as Cetti's warbler which was heard singing during the Site visit.

It is recommended that breeding bird and wintering bird surveys are completed to assess fully the assemblage of birds at the Site, throughout the year. This will also assess any relationship between the important bird assemblage on Brent Reservoir (for which it is designated a SSSI), and the Site. The breeding bird survey should comprise a minimum of five visits between March and July to enable the number of territories for each species to be adequately defined. The wintering bird survey should comprise of seven survey visits between October and March. These surveys should be carried out in accordance with the British Trust for Ornithology's Common Bird Census (CBC) (Bibby et al., 2000).

Recommendation 7

Breeding bird and wintering bird surveys should be undertaken at West Hendon Playing Fields. The Common Bird Census methodology should be employed to identify the species assemblage that is present at the site as well as providing data on the number of territories for each species during breeding season. The review needs to consider the relationship between the masterplan development footprint and the SSSI

All wild birds, their active nests and eggs are protected under The Wildlife and Countryside Act 1981 (as amended), which makes it an offence deliberately, or recklessly, to kill or injure any wild bird or damage or destroy any active birds' nest or eggs.

Scheduling vegetation and building removal works between the months of September and February inclusive (i.e. outside of the bird season) would avoid impacts on breeding birds.

Where vegetation clearance works are required during the breeding bird season (between the months of March and August inclusive), a nesting bird check undertaken by an experienced ornithologist will be required. Any active birds' nest identified during this check must be protected from harm until the nesting attempt is complete. This will require a buffer to be left around the nest, the size of which will depend upon the species involved (as a general rule, this will be 10m in all directions around the nest). Any buffers established as a result of the initial nesting bird check must be subjected to a second check after the original nesting attempt is completed, before such areas can be removed during the breeding bird season.

Recommendation 8

If any habitat suitable for breeding birds is to be removed this should be completed outside the breeding bird season which runs from March to August inclusive. Any clearance of breeding bird habitat between March and August should be preceded by a nesting bird check.

It is strongly recommended that any potential nesting bird habitat is cleared outside the breeding bird season in order to avoid potentially lengthy delays if nests are found during nesting bird checks.

The loss of bird nesting habitat at the site will be mitigated for by the provision of bird boxes as part of the biodiversity enhancements proposed for the site and a suitable enhancement scheme will be developed after the bird surveys have been completed.

Bats

The Site contains suitable bat roosting habitat in the form of scattered mature trees, standing dead wood and a building. Bats and their roosts are protected by law (see Appendix 1), which makes it an offence deliberately to capture, injure, kill or disturb a bat, disturb a bat, damage or destroy a bat roost, disturb a bat at a roost or obstruct access to a roost.

Removal of buildings and trees may kill, injure or disturb bats, or destroy roosts, whilst development in close proximity to roosts may obstruct access to a roost or result in further disturbance. A bat inspection survey should be undertaken at the Site to identify which buildings or trees may support roosting bats. The data gathered in this inspection will inform requirements for nocturnal survey effort in the summer months.

Given the presence of the woodland and hedgerows on Site in the surrounding urban area, there is some potential for the Site to act as an important foraging and commuting area for local bat populations. Impacts on foraging and commuting bats are possible through clearance of vegetation, construction activities, habitat loss and habitat modification an increase in use.

All bat species are protected under Schedule 5 of the Wildlife and Countryside Act 19881 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) (see Appendix 1). Bats are also Species of Principal Importance listed on Section 41 of the NERC Act (2006).

It is recommended that further survey work is undertaken to assess the value of the Site for foraging and commuting bats. These surveys should take the form of transect surveys and should follow best practice methodologies set out by the Bat Conservation Trust (Collins, 2016).

Recommendation 9

A bat inspection of buildings and trees at the Site should be completed to establish potential presence of bat roosts. This should be undertaken in accordance with the Bat Conservation Trust's Good Practice Guidelines (Collins, 2016).

Recommendation 10

Bat activity transect surveys should be completed at the Site to identify species present, key foraging areas and commuting routes. These surveys should be completed in accordance to the methodology set out within the Bat Conservation Trust's Good Practice Guidelines (Collins, 2016).

Bat roosting behaviour, commuting and foraging activity can additionally be dramatically affected by artificial lighting (BCT, 2009). It is strongly recommended that any proposed exterior lighting is managed appropriately to ensure that the area remains suitable for foraging bats. A sensitive lighting scheme should be developed to allow suitable roosting and foraging areas for bats.

Recommendation 11

Light pollution from any lighting should be minimised both during construction and post-development. A sensitive lighting scheme should be developed to allow for suitable roosting and foraging areas for bats within the site with maximum use of down lighting and hoods where necessary.

Badgers

The habitats on site, including the semi-improved grassland, hedgerow and woodland, and the wider habitat provides suitable habitat for badgers. A disused sett was found on the western boundary of the Site, however there was no current evidence of badger recorded. Badger activity can change significantly within a short period of time. As a result, it is recommended that ongoing badger sett checks are conducted during other surveys, such as the wintering and breeding bird surveys, to monitor badger activity. Should badger activity increase, a full badger survey may be required.

Recommendation 12

Ongoing monitoring of the disused sett during breeding and wintering bird surveys to inform of any changes in occupation of this species. This could lead to a full badger survey if activity is recorded

Opportunities for biodiversity enhancement

Following the issue of the National Planning Policy Framework (NPPF; see Appendix 1), all planning decisions should aim to maintain and enhance, restore or add to biodiversity and geological conservation interests. Ecological enhancements should aim to deliver biodiversity gains for the proposed development site.

Planting of native species or those with a known attraction or benefit to local wildlife is recommended in landscape proposals to enhance foraging opportunities for birds and bats by increasing the invertebrate diversity on site.

Habitats for native species planting should complement the landscape character and also the retained woodland, hedgerow and marginal vegetation habitats. Thus, opportunities for creation of broadleaved woodland, hedgerows and marginal vegetation should be explored. The locations of new areas of planting should aim to buffer existing habitats and form a coherent network of ecologically rich habitats through the Site, in line with *Policy 2.18 Green infrastructure of the London Plan*. Areas that could be improved include the lines of trees and scrub surrounding the sport pitches, to form migration corridors across the Site. The retained and new habitats would ideally link to habitats outside the site boundary, such as the green space of the Silver Jubilee Park to continue this network across the landscape.

Recommendation 13

It is recommended that native British species are incorporated within the planting scheme for the final landscaping design in order to enhance the overall value of the site for biodiversity, in line with the requirements of the NPPF. The planting scheme needs to ensure the creation of green corridors across the site post-development

The proposal to plant an orchard within the masterplan provides a positive biodiversity enhancement for the site. This will increase foraging opportunities for birds and mammals and attract invertebrates. It is recommended the orchard is managed in a low-intensity manner, with the purpose of producing a traditional orchard, which is a Habitat of Principle Importance and supports a wide range of wildlife. There should be an additional focus on connecting the orchard to the existing trees and scrub, to ensure it is not isolated.

Recommendation 14

It is recommended the proposed orchard is non-intensively managed and connected with the wider landscape to improve biodiversity and form part of a network of ecologically rich habitats across the Site.

The proposed Water Sensitive Urban Design (WSUDS) offers further opportunities for biodiversity enhancement. Whilst the depth of the proposed feature is currently unknown, should it be deep enough to support a fish population, then the creation of islands should be considered. This may provide suitable habitat for great crested grebe, whose high breeding density on the adjacent Brent Reservoir (Welsh Harp) SSSI is the primary reason for its designation. The margins of the water should be irregularly shaped to increase the variety of micro-habitats and maximise the potential biodiversity of the feature and the onsite design should be overseen by an ecologist.

Recommendation 15

It is recommended that the WSUDS feature is designed to enhance biodiversity. Depending upon the characteristics of the pond, enhancements to be considered include irregular margins and islands and ecological support should be sought in finalising the design and during construction to maximise its biodiversity potential.

The broadleaved woodland and scrub have the potential to support foraging and hibernating hedgehogs. The woodland is likely to provide abundant natural hibernacula, however the masterplan's development footprint upon the amenity grassland will remove some foraging habitat for this species. Hedgehogs are a Species of Principal Importance under the NERC Act (2006) and the Local and Regional Planning Authorities have a responsibility to conserve populations of these species. The improved connectivity of habitats across the Site, as recommended above (Recommendations 9 and 10), would help to sustain the population at a local level. Enhanced opportunities for breeding birds

should be incorporated into the design scheme. Bird boxes should be mounted on trees, fences and built structures at the site. It is recommended that the bird box scheme is developed following breeding bird surveys at the Site. Recommendations for bat provisions should also be made following any subsequent surveying for this species group. The subsequent reports on baseline conditions will make detailed recommendations on bird box scheme

Further opportunities for ecological enhancements could be made at the site post-development to encourage native wildlife and create rich and ecologically valuable habitats at the site. Enhancements to consider could include provision of log piles and the creation of a wildlife pond.

Summary of recommendations

Table 7 below summarises the recommendations made within this report, and specifies the stage of the development at which action is required. Colour coding of cells within the table is as follows:

Key:

	No action required for this species group at this stage
	Action required (see notes for details)
	Level of action required will be determined following the further survey work

Table 7: Summary of recommendations at West Hendon Playing Fields

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Habitats	Yes – consultation required with Natural England and Local Authority to agree proposed survey protocol	Yes- protect woodland, hedgerow and ponds	TBC	Yes- native species planting, WSUDS design and Green Infrastructure Network
Bats	Yes – further survey work	TBC	TBC	TBC
Great crested newt	Yes – further survey work	TBC	TBC	TBC

Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Reptiles	Yes – further survey work	TBC	TBC	TBC
Birds	Yes – further survey work	TBC	TBC	TBC
Badgers	No	Yes – monitor disused sett.	TBC	TBC
Invasive species	Yes – further survey work	Yes - Removal of invasive species present	TBC	TBC
Hedgehog	No	No	No	Suitable habitat to be provided in enhancement scheme

6. CONCLUSIONS

The Site at West Hendon Playing Fields contains habitats which have the potential to support several protected species groups, including birds, reptiles, great crested newt and bats. This has been previously recognised with a significant proportion of the Site being designated as part of the Brent Reservoir (Welsh Harp) LNR and Site of Metropolitan Importance. Additionally, Brent Reservoir (Welsh Harp) SSSI is directly adjacent to the Site.

Formal consultation with Natural England is required at the earliest juncture, to ascertain their recommendations and concerns and agree survey protocol. It is likely further surveys will be recommended to ensure that any development or land use change can demonstrate that it does not affect the integrity of these areas and the species they support. These are likely to dovetail with the further work recommended here, but consensus on the way forward is necessary now to ensure that surveys meet the expectations and requirements of Natural England.

There is potential for the masterplan footprint to support a number of protected and notable species. Further survey work has been recommended for breeding and wintering birds and bats and to confirm presence of absence of great crested newt and bats.

The Site provides several exciting opportunities for biodiversity enhancement, including the retention of existing green infrastructure and the enhancement of habitat corridors to improve connectivity across the Site and the wider surrounding area. In line with the NPPF framework, further options for biodiversity enhancement have been recommended, including the provision of local and national priority habitats, such as ponds and traditional orchards. Bird and bat box provisions will be recommended following surveys for these species.

It is anticipated that these measures will serve to deliver local and national priority habitats, helping to secure biodiversity gains and ultimately a sustainable masterplan that can meet the local recreational needs and maintain the wildlife value of the immediate area.

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8. APPENDICES

Appendix 1: Relevant wildlife legislation and planning policy

Please note that the following is not an exhaustive list, and is solely intended to cover the most relevant legislation pertaining to species commonly associated with development sites.

Subject	Legislation (England)	Relevant prohibited actions
Amphibians		
Great crested newt *Triturus cristatus* Natterjack toad *Epidalea calamita*	Schedule 2 of Conservation of Habitats and Species Regulations 2017 (as amended) Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	• Intentionally or deliberately capture or kill, or intentionally injure; • Deliberately disturb or intentionally or recklessly disturb them in a place used for shelter or protection; • Damage or destroy a breeding site or resting place; • Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; and • Possess an individual, or any part of it, unless acquired lawfully.
Reptiles		
Common lizard *Zootoca vivipara* Adder *Vipera berus* Slow-worm *Anguis fragilis* Grass snake *Natrix helvetica helvetica*	Part of Sub-section 9(1) of Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill or injure individuals of these species (Section 9(1)).

Subject	Legislation (England)	Relevant prohibited actions
Sand lizard *Lacerta agilis* Smooth snake *Coronella austriaca*	Full protection under Section 9 of Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	• Deliberately or intentionally kill, capture (take) or intentionally injure; • Deliberately disturb; • Deliberately take or destroy eggs; • Damage or destroy a breeding site or resting place or intentionally damage a place used for shelter; or • Intentionally obstruct access to a place used for shelter.
Birds		
All wild birds	Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill, injure, or take any wild bird or their eggs or nests.
'Schedule 1' Birds	Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)	• Disturb any wild bird listed on Schedule 1 whilst it is building a nest or is in, on, or near a nest containing eggs or young; or • Disturb the dependent young of any wild bird listed on Schedule 1.
Mammals		
Bats (all UK species)	Schedule 2 of Conservation of Habitats and Species Regulations 2017 (as amended)	• Deliberately capture, injure or kill a bat; • Deliberately disturb a bat (disturbance is defined as an action which is likely to: (i) Impair their ability to survive, to breed or reproduce, or to rear or nurture their young; (ii) Impair their ability to hibernate or migrate; or (iii) Affect significantly the local

Subject	Legislation (England)	Relevant prohibited actions
	Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	distribution or abundance of the species); • Damage or destroy a bat roost; • Intentionally or recklessly disturb a bat at a roost; or • Intentionally or recklessly obstruct access to a roost. In this interpretation, a bat roost is "*any structure or place which any wild [bat]...uses for shelter or protection*". Legal opinion is that the roost is protected whether or not the bats are present at the time.
Badger *Meles meles*	Protection of Badgers Act 1992	Under Section 3 of the Act: • Damage a sett or any part of it; • Destroy a sett; • Obstruct access to, or any entrance of, a sett; or • Disturb a badger when it is occupying a sett. A sett is defined legally as any structure or place which displays signs indicating current use by a badger (Natural England 2007).
Hazel dormouse *Corylus avellana*	Schedule 2 of Conservation of Habitats and Species Regulations 2017 (as amended)	• Intentionally or deliberately capture or kill, or intentionally injure; • Deliberately disturb or intentionally or recklessly disturb them in a place used for shelter or protection;

Subject	Legislation (England)	Relevant prohibited actions
	Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Damage or destroy a breeding site or resting place; • Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; and • Possess an individual, or any part of it, unless acquired lawfully.
Otter *Lutra lutra*	Schedule 2 of Conservation of Habitats and Species Regulations 2017 (as amended) Section 9(4)(b) and (c) of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Deliberately capture, injure or kill an otter; • Deliberately disturb an otter in such a way as to be likely to significantly affect the local distribution or abundance of otters or the ability of any significant group of otters to survive, breed, rear or nurture their young; • Intentionally or recklessly disturb any Otter whilst it is occupying a holt; • Damage or destroy or intentionally or recklessly obstruct access to an otter holt.
Water vole *Arvicola amphibius*	Section 9 of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill, injure or take water voles; • Possess or control live or dead water voles or derivatives; • Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection; or • Intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose.
Crustaceans		

Subject	Legislation (England)	Relevant prohibited actions
White-clawed crayfish *Austropotamobius pallipes*	Section 9(1) of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill, injure or take white-clawed crayfish by any method.

Conservation of Habitats and Species Regulations 2017 (as amended)

Full legislation text available at: http://www.legislation.gov.uk/uksi/2010/490/regulation/61/made

The Wildlife and Countryside Act 1981 (as amended)

Full legislation text available at: http://www.legislation.gov.uk/ukpga/1981/69/contents.

Countryside and Rights of Way Act 2000

Full legislation text available at: http://www.legislation.gov.uk/ukpga/2000/37/contents

Protection of Badgers Act 1992

Full legislation text available at: http://www.legislation.gov.uk/ukpga/1992/51/contents

Section 41 of Natural Environments and Rural Communities (NERC) Act 2006

Full legislation text available at: http://www.legislation.gov.uk/ukpga/2006/16/section/41

Many of the species above, along with a host of others not afforded additional protection, are listed on Section 41 of the NERC Act 2006.

Section 41 (S41) of the Natural Environment and Rural Communities (NERC Act 2006) requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The list (including 56 habitats and 943 species) has been drawn up in consultation with Natural England and draws upon the UK Biodiversity Action Plan (BAP) List of Priority Species and Habitats.

The S41 list should be used to guide decision-makers such as local and regional authorities to have regard to the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006. The duty applies to all local authorities and extends beyond just conserving what is already there, to carrying out, supporting and requiring actions that may also restore or enhance biodiversity.

Schedule 9 of Wildlife and Countryside Act 1981 (as amended)

In addition to affording protection to some species, The Wildlife and Countryside Act 1981 (as amended) also names species which are considered invasive and require control. Section 14 of the Act prohibits the introduction into the wild of any animal of a kind which is not ordinarily resident in, and is not a regular visitor to, Great Britain in a wild state, or any species of animal or plant listed in Schedule 9 to the Act. In the main, Schedule 9 lists non-native species that are already established in the wild, but which continue to pose a conservation threat to native biodiversity and habitats, such that further releases should be regulated.

Wild Mammals (Protection) Act 1996

Full legislation text is available at: http://www.legislation.gov.uk/ukpga/1996/3/contents

Under this legislation it is an offence to cause unnecessary suffering to wild mammals, including by crushing and asphyxiation. It largely deals with issues of animal welfare, and covers all non-domestic mammals including commonly encountered mammals on development sites such as rabbits, foxes and field voles.

Birds of Conservation Concern (BoCC)

This is a quantitative assessment of the status of populations of bird species which regularly occur in the UK, undertaken by the UK's leading bird conservation organisations. It assesses a total of 246 species against a set of objective criteria to place each on one of three lists – Green, Amber and Red – indicating an increasing level of conservation concern. There are currently 52 species on the Red list, 126 on the Amber list and 68 on the Green list. The classifications described have no statutory implications, and are used merely as a tool for assessing scarcity and conservation value of a given species.

National Planning Policy Framework (NPPF)

Full text is available at: https://www.gov.uk/government/collections/revised-national-planning-policy-framework

A revised NPPF was published on 24 July 2018 setting out the Government's planning policies for England and the process by which these should be applied. The policies within the NPPF are a material consideration in the planning process. The key principle of the NPPF is a presumption in favour of sustainable development, with sustainable development defined as a balance between economic, social and environmental needs.

Policies 170 to 183 of the NPPF address conserving and enhancing the natural environment, stating that the planning system should:

- Contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes;
- Recognise the wider benefits of ecosystem services; and
- Minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

Furthermore there is a focus on re-use of existing brownfield sites or sites of low environmental value as a priority, and discouraging development in National Parks, Sites of Specific Scientific Interest, the Broads or Areas of Outstanding Natural Beauty other than in exceptional circumstances.

Where possible, planning policies should also

"promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity".

Appendix 2: Phase 1 Habitat species list

Please note that these lists are intended to be incidental records and do not constitute a full botanical survey of the site. Relative abundance is given using the DAFOR scale. Please see Table 2 for details.

Amenity grassland

Common Name	Systematic Name	Relative abundance
Perennial rye-grass	*Lolium perenne*	Dominant
White clover	*Trifolium repens*	Abundant
Cleavers	*Galium aparine*	Occasional
Dandelion	*Taraxacum sp.*	Occasional
Dove's-foot crane's-bill	*Geranium molle*	Occasional
Red dead-nettle	*Lamium purpureum*	Occasional

Broadleaved woodland

Common Name	Systematic Name	Relative abundance
Oak	*Quercus sp.*	Abundant
Ash	*Fraxinus excelsior*	Abundant
Alder	*Alnus glutinosa*	Frequent
Bramble	*Rubus fruticosus agg.*	Frequent
Hart's-tongue	*Phyllitis scolopendrium*	Occasional
Hawthorn	*Crataegus monogyna*	Occasional
Lords-and-ladies	*Arum maculatum*	Occasional
Ramsons	*Allium ursinum*	Occasional
Sycamore	*Acer pseudoplatanus*	Occasional
Willow	*Salix sp.*	Occasional*

*Dominant within the willow carr woodland

Semi-improved grassland

Common Name	Systematic Name	Relative abundance
Yorkshire-fog	*Holcus lanatus*	Dominant
Cock’s-foot	*Dactylis glomerata*	Abundant

Giant hogweed	*Heracleum mantegazzianum*	Rare
Wavy bitter-cress	*Cardamine flexuosa*	Rare

Dense scrub

Common Name	Systematic Name	Relative abundance
Bramble	*Rubus Fruticosus agg.*	Dominant
Willow	*Salix sp.*	Frequent
Cleavers	*Galium aparium*	Occasional

Marginal vegetation

Common Name	Systematic Name	Relative abundance
Great reedmace	*Typha latifolia*	Dominant
Great willowherb	*Epilobium hirsutum*	Abundant
Pendulous sedge	*Carex pendula*	Frequent
Weld	*Reseda luteola*	Frequent
Meadowsweet	*Filipendula ulmaria*	Occasional
Water dock	*Rumex hydrolapathum*	Occasional
Yellow iris	*Iris pseudacorus*	Occasional

Introduced shrub

Common Name	Systematic Name	Relative abundance
Mahonia	*Mahonia sp.*	Frequent

Species-poor hedgerow

Common Name	Systematic Name	Relative abundance
Hawthorn	*Crataegus monogyna*	Abundant
Blackthorn	*Prunus spinosa*	Abundant
Ivy	*Hedera helix*	Occasional
Cow parsley	Anthriscus sylvestris	Occasional

Scattered trees

Common Name	Systematic Name	Relative abundance
Oak	*Quercus sp.*	Dominant
Ash	*Fraxinus excelsior*	Abundant
Cherry	*Prunus sp.*	Occasional
Elder	*Sambucus nigra*	Occasional
Ivy	*Hedera helix*	Occasional
London plane	*Platanus x hispanica (P. occidentalis x orientalis)*	Occasional
Pedunculate oak	*Quercus robur*	Occasional

Appendix 3: Site photographs

Photograph 1: Amenity grassland

Photograph 2: Broad-leaved woodland

Photograph 3: Semi-improved grassland

Photograph 4: Hardstanding

Photograph 5: Buildings

Photograph 6: Dense scrub

Photograph 7: Pond

Photograph 8: Marginal Vegetation

Photograph 9: Introduced shrub

Photograph 10: Species-poor hedgerow

Photograph 11: Scattered trees

Appendix 4: Masterplan

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