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# WORMWOOD SCRUBS

## Extended Phase I Habitat Survey

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# 1 Executive Summary

London Wildlife Trust was commissioned by the London Borough of Hammersmith & Fulham (LBHF) to undertake an Extended Phase 1 habitat survey of Wormwood Scrubs, hereafter referred to as 'the Scrubs'. The survey was commissioned to assess the biodiversity value of the Scrubs and establish an ecological baseline in order to evaluate the suitability of the proposed ecological enhancements.

A Habitat Survey (Phase 1 extended) of the Scrubs was carried out over two days in September 2016 by Mike Waller. The survey followed the standard Phase 1 habitat survey methodology (JNCC, 1990), subsequently modified for Greater London and most recently adopted as Greater London Authority's *Open Space and Habitat Survey for Greater London* methodology (Mayor of London, 2004).

Most areas were regarded as providing a moderate wildlife value due to their low plant species diversity and habitat homogeneity. For example, most areas of woodland were very even-aged with little or no ground layer. Furthermore, approximately 30% of the Scrubs is devoted to playing fields with very short grassland of low wildlife value. The following areas were considered to represent the most biodiversity interest:

## Meadow area

- The large scrub and rough grassland area (that forms the western part of the site) provides the highest wildlife value containing extensive areas of scrub and wildflower-rich grassland providing excellent habitat for pollinating species.
- This area is known to provide suitable habitat for several protected or scarce London species such as common lizard, meadow pipit and lesser whitethroat.
- An excellent area for migrant birds such as ring ouzel, whinchat and short-eared owl.

## Chats Paddock

- Despite its small size, this area also offers a high wildlife value with a good range of tree and berry-bearing shrub species and thick understorey suitable for nesting birds.
- A good area for migrant birds such as nightingale and redwing.

## Martin Bell's Wood (TC4)

- Consists of a well-structured woodland containing numerous open glades which likely provide habitats for notable invertebrate and bird species.

Ecological enhancements are proposed as part of the High Speed Rail 2 (HS2) mitigation measures. The proposed ecological enhancements are summarised as follows:

- heathland type planting in northern area
- Japanese knotweed removal
- woodland improvements through thinning and glade creation
- species-rich grassland creation
- hedgerow planting
- scrape/ditch creation

All proposed ecological enhancements are deemed to be appropriate and suitable for the Scrubs, acting to support, protect and enhance the overall biodiversity value of the site. Some additional enhancements are proposed following this Extended Phase 1 survey and these are included in chapter 2; *Additional Enhancements*.

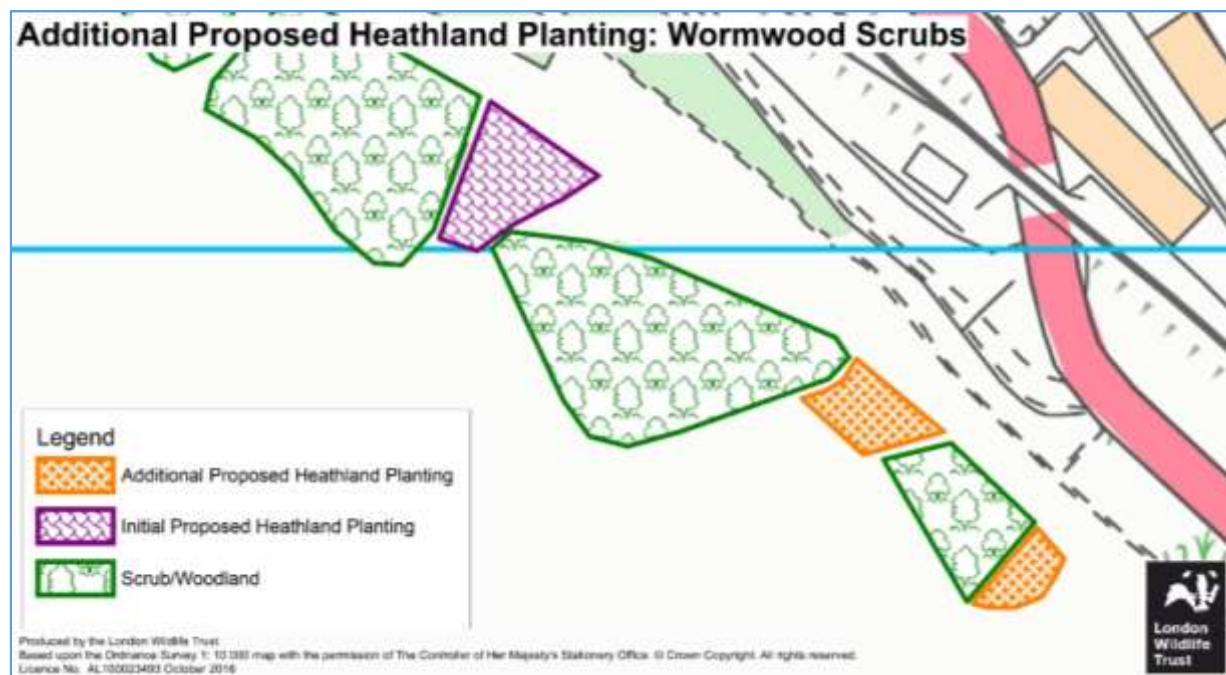
## 2 Additional Enhancements

In addition to the ecological enhancements proposed by LBHF, shown in Appendix 1, the Trust proposes the following further enhancements;

### Heathland planting

TQ 22658 81957 and TQ 22709 81902

Extension of initially proposed heathland planting area to two smaller spaces south-east between areas of scrub/young woodland. See the map below.



These additional spaces are almost identical in vegetation composition to the originally proposed area and would double the size of the heathland area on the Scrubs. Their close proximity to the originally proposed area is also suitable to create a connected strip between the areas of scrub/woodland and reduce habitat fragmentation.

Heathland is a declining habitat in London with only fragments left in south and west London which are isolated and restricted by the presence of suitable soils. Some of the largest areas include Hounslow Heath, Addington Hills and Wimbledon Common. Any opportunities to increase the extent of London's heathland should be encouraged.

### 3 Introduction

London Wildlife Trust (hereafter referred to as 'the Trust') was commissioned by LBHF to undertake an Extended Phase 1 survey of the Scrubs. The survey aims to identify and evaluate the current biodiversity value of the areas, assess the suitability of the proposed ecological enhancements and identify any additional enhancement opportunities while maintaining current usage.

Wormwood Scrubs is situated in inner west London, between White City, East Acton and Kensal Green within the northern part of the borough (postcode W12). There are a range of semi-natural habitats across the site which is extensive and covers an area of just over 66 hectares (not including Little Wormwood Scrubs).

The entire area is designated as common land since the Wormwood Scrubs Act 1879 was passed by Parliament to lay down the conditions by which the area would be owned by the British Army. The Act remains in force to this day so that the area is kept for military training purposes but also '*the perpetual use thereof by the inhabitants of the metropolis for exercise and recreation*'<sup>1</sup>. Its common land status is protected by the 1879 Act, as well as that of the Commons Act 2006, requiring Ministerial consent for the erection of any structure or impediment to access.<sup>2</sup> The Scrubs are also designated Metropolitan Open Land.

A significant extent (42 ha) of the Scrubs is identified as a Site of Borough Importance for Nature Conservation (site H&FBI01 *Wormwood Scrubs Park*). In addition seven discrete parcels form a designated Local Nature Reserve (LNR), covering all areas of woodland which are primarily located around the edge of the site.

Currently the area is managed by Hammersmith & Fulham Council in collaboration with Groundwork. The site is championed by the Friends of Wormwood Scrubs who continue to fight ongoing development plans that infringe upon the natural character and biodiversity of the site.

#### HS2 works

A strip of land adjacent to the railway lines (which run along the north of the site) is likely to be destroyed or at least heavily disturbed by the Stamford Brook sewer realignment as part of HS2 construction measures. The land under construction usage will run from Chats Paddock south-west along the embankment and south along the western edge of the open scrub area where it will join Braybrook Street. A satellite compound will also be erected on the Scrubs immediately at the edge of Chats Paddock.

Initial ecological mitigation measures were proposed by HS2 for the southern part of the Scrubs where a wetland was due to be constructed. This proposal was rejected as the measures were deemed unsuitable, conflicting with the amenity use of this part of the Scrubs.

This report is in two sections. The first section summarises the habitat types and significant vascular plant species found at the surveyed sites the site evaluation. The appendices comprise all the species data as well as individual habitat maps for each individual site.

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<sup>1</sup> Quote taken from the Wormwood Scrubs Act 1879.

<sup>2</sup> In addition proposed structures require the consent of the borough council and the Secretary of State for Defence.

### 3.1 Surveyed site details

Table 1 provides details of the 7 survey areas. Area names follow the woodland labels in the Ecological proposals map (TC1-TC11) provided by Hammersmith & Fulham Council and LNR sites names where possible.

Table 1. Surveyed site details

Site name	Notes
TC8, TC9 & TC10 (Braybrook Woods) and surrounds	Sections of thick enclosed young woodland with some areas of open rough grassland and amenity grassland
North-west corner woods	An area of thick copses with sections of rough grassland and a disused tarmac picnic area
Meadow area (western scrub and rough grassland area)	Extensive area of open hawthorn and bramble scrub with rough grassland bordered by sections of planted hedgerow
Lester's Embankment, TC1 wood and Chats Paddock	Lester's Embankment comprises of a south-facing railside embankment thickly overgrown with bramble, shrubs, young trees and large areas of Japanese knotweed. Chats Paddock is a small area of thick berry-bearing shrubs, trees and bramble
TC2 and TC3 woods	Sections of thick enclosed bordering woodland with some areas of rough grassland and bramble thickets bordering the eastern edge of the Scrubs.
TC4 (Martin Bell's Wood), TC5, TC6 & TC7 woods (and triangular amenity grassland)	A mixture of open planted copses, rough grassland, bramble thickets and amenity grassland bordering the southern edge of the Scrubs.
Playing fields & TC11 wood (Central Woodland Copse)	Primarily open amenity grassland with multiple playing fields. At its centre is the Central Woodland Copse which is a thick enclosed woodland

### 3.2 Site Details

#### 3.2.1 Topography

The Scrubs lie on the northern side of the Thames Valley above the Lower Flood Plain with a very gently south-sloping aspect. The highest point is approximately 28 metres asl at the northern edge dropping to approximately 15 metres asl at the southern extremity of the site.

The railway embankment which marks the northern edge of the site is steep and approximately 15m high.

#### 3.2.2 Hydrology and Soils

The entire site sits directly on London Clay which underlies much of London originating as marine mud deposited on the sea floor approximately 50 million years ago. During the summer months, the clay dries and contracts causing surface cracks to appear whereas during the wetter winter months, the area often becomes muddy as the water is slow to drain through the thick clay.



The railway embankment is man-made comprising of ‘a mixture of sand and gravel, rubble, spent ballast, clay and coal dust and associated debris from the age of steam.’<sup>3</sup>

The soils present across the site vary from neutral to slightly acidic and may even be slightly alkaline in places due to historic land use.

### 3.2.3 Access and Usage

The use of the site is very varied due to its large size, openness and relatively level topography. The primary usage of the Scrubs is for leisure and amenity. Most obviously, the large amenity grassland area in the eastern-central part of the site is devoted to playing fields with a number of marked football pitches. Immediately adjacent to this area in the west is an area designated for model aircraft flying.

The path that runs around the perimeter of the site is popular with joggers and dog walkers. The site is also used for wildlife watching activities and especially birdwatching in the eastern scrub and rough grassland area which attracts unusual migrant species during spring and summer (see Executive Summary, Chapter 1).

The Scrubs is publically accessible at all times.

## 3.3 Desktop Study

One data search was sought and undertaken by Greenspace Information for Greater London (GiGL). Ecological data was obtained to a radius of 900m. Data obtained was on proximity of Statutory Sites and Local Nature Reserves, Sites of Importance for Nature Conservation (SINCs), Important Geological/Geomorphological Sites, species records including protected species, species of conservation concern and invasive species, habitat records and general open space data.

The ecological data search report reference is 1691 and was prepared on 18<sup>th</sup> October 2016 (Sleeman, 2016).

The tables below show the statutory and non-statutory sites (Table 2) that are found nearby and the relevant protected, BAP and species of conservation concern (Table 3) located within the respective data search area that could be present within the site.

Table 2. Statutory and Non-statutory sites

Site	Statutory sites	Non-statutory sites
Wormwood Scrubs	Wormwood Scrubs LNR (includes all the woodland sections on the Scrubs)	M006 London’s Canals Met SINC
		M125 Kensal Green Cemetery Met SINC
		EaBI19 Acton RAILSIDES SINC
		H&FBI01 Wormwood Scrubs Park SINC
		H&FBI02 Old Oak Common Sidings Birch Wood SINC
		H&FBI07A Old Oak Sidings SINC

<sup>3</sup> All quotes and much information for this subchapter is taken from *The Wildlife of Scrubs Wood* (1984) by The Hammersmith & Fulham Group of London Wildlife Trust.

Site	Statutory sites	Non-statutory sites
		H&FBI07C Wormwood Scrubs Railway Embankment SINC
		H&FBI07D Central line west of White City SINC
		H&FBII01 St Mary's Cemetery SINC
		K&CBII01 British Rail Western Region Land SINC
		H&FL14 Little Wormwood Scrubs Park SINC

Table 3. Relevant protected and species of conservation concern

Common name	Scientific name	Designation
field mouse-ear	<i>Cerastium arvense</i>	Local Spp of Cons Conc
henbane	<i>Hyoscyamus niger</i>	Local Spp of Cons Conc RL_Vulnerable
common meadow-rue	<i>Thalictrum flavum</i>	Local Spp of Cons Conc
heath dog-violet	<i>Viola canina</i>	Local Spp of Cons Conc RL_LowerRisk
small heath	<i>Coenonympha pamphilus</i>	NERC Act Section 41 BAP Priority National BAP Priority London Local Spp of Cons Conc RL_LowerRisk
mullein wave	<i>Scopula marginepunctata</i>	NERC Act Section 41 BAP Priority National BAP Priority London Local Spp of Cons Conc
cinnabar	<i>Tyria jacobaeae</i>	NERC Act Section 41 BAP Priority National BAP Priority London Local Spp of Cons Conc
common lizard	<i>Zootoca vivipara</i>	NERC Act Section 41 BAP Priority National W&CA Sch5 Sec 9.1k/i BAP Priority London Local Spp of Cons Conc
skylark*	<i>Alauda arvensis</i>	NERC Act Section 41 Bird-Red BAP Priority London Local Spp of Cons Conc
meadow pipit	<i>Anthus pratensis</i>	Local Spp of Cons Conc
tree pipit*	<i>Anthus trivialis</i>	NERC Act Section 41 BAP Priority National Bird-Red BAP Priority London Local Spp of Cons Conc
short-eared owl*	<i>Asio flammeus</i>	Birds Dir Anx 1 Local Spp of Cons Conc
kestrel	<i>Falco tinnunculus</i>	Local Spp of Cons Conc
linnet	<i>Linaria cannabina</i>	Bird-Red

Common name	Scientific name	Designation
		BAP Priority London Local Spp of Cons Conc
song thrush	<i>Turdus philomelos</i>	Bird-Red BAP Priority London Local Spp of Cons Conc
ring ouzel*	<i>Turdus torquatus</i>	NERC Act Section 41 BAP Priority National Bird-Red
noctule bat	<i>Nyctalus noctula</i>	Cons Regs 2010 Sch2 Hab&Spp Dir Anx 4 NERC Act Section 41 BAP Priority National W&CA Sch5 Sec 9.4b W&CA Sch5 Sec 9.4c BAP Priority London Local Spp of Cons Conc
pipistrelle	<i>Pipistrellus pipistrellus</i>	Cons Regs 2010 Sch2 Hab&Spp Dir Anx 4 W&CA Sch5 Sec 9.4b W&CA Sch5 Sec 9.4c BAP Priority London Local Spp of Cons Conc
soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	Cons Regs 2010 Sch2 Hab&Spp Dir Anx 4 NERC Act Section 41 BAP Priority National W&CA Sch5 Sec 9.4b W&CA Sch5 Sec 9.4c BAP Priority London Local Spp of Cons Conc

\*Species that regularly use the Scrubs as a stop-over area during migration.

## 4 Extended Phase I survey details

### 4.1 Survey methodology

A Habitat Survey (Phase I extended) of the Scrubs was carried out on 12<sup>th</sup> and 14<sup>th</sup> September 2016 (see Table 4). The survey followed standard Phase I habitat survey methodology (JNCC, 1990), as modified for Greater London by the former London Ecology Unit (LEU, 1994) and most recently adopted as Greater London Authority's *Open Space and Habitat Survey for Greater London* methodology (Mayor of London, 2004).

Table 4. Timings of area surveys

Locations surveyed	Date surveyed	Weather Conditions	Time surveyed (hours/minutes)
TC8, TC9 & TC10 (Braybrook Woods) and surrounds	12 <sup>th</sup> September	Hot, sunny spells, breezy	2 hours
TC4 (Martin Bell's Wood), TC5, TC6 & TC7 woods	12 <sup>th</sup> September	Hot, sunny spells, breezy	2 hours
North-west corner woods	14 <sup>th</sup> September	Warm, sunny spells, breezy	40 minutes
Meadow area (western scrub and rough grassland area)	14 <sup>th</sup> September	Warm, sunny spells, breezy	1 hour 30 minutes
Lester's Embankment, TC1 wood and Chats Paddock	14 <sup>th</sup> September	Warm, sunny spells, breezy	1 hour
Playing fields & TC11 wood (Central Woodland Copse)	14 <sup>th</sup> September	Warm, sunny spells, breezy	1 hour
TC2 and TC3 woods	14 <sup>th</sup> September	Warm, sunny spells, breezy	1 hour 30 minutes

Characteristic, rare and interesting species and plant assemblages were evaluated for conservation designations and assessed as to whether they were notable for the Greater London area. Notable is defined as species which were recorded from 15% or fewer of the 400 two-kilometre recording squares (tetrads) in Greater London in the *Flora of the London Area* (Burton 1983).

Complex taxa, such as *Taraxacum* (dandelions) and *Rubus* (brambles) are treated as aggregates as there is little value in distinguishing these for determining habitat types, especially in London.

Casual recording of fauna was undertaken throughout the duration of the Habitat Survey and can be found in the appendices. Photographs were taken of the current habitat conditions during the survey.

## 4.2 Aims of the survey

The aims are to:

- Identify dominant, characteristic and otherwise unusual vascular plant species and the chief habitats present using the DAFOR scale<sup>4</sup> for each habitat;
- Determine the importance and status of these features in a local, regional (London) and national context as noted in Biodiversity Action Plans;
- Determine whether or not the site supports notable, rare and/or protected species;
- Make incidental recording of other fauna sightings;
- Identify legal ecological requirements that need to be considered;
- Identify areas of ecological sensitivity that should be protected;
- Provide recommendations on additional ecological enhancements;
- Assess the suitability of the proposed ecological enhancements.

Survey objectives did not include non-vascular plant species (e.g. mosses, algae). Given the broad characteristics of the habitats this is unlikely to be a determinant factor.

## 4.3 Survey limitations

### 4.3.1 Seasonal plants and animals

The timing of the survey visit was considered adequate to characterise the plant species and habitats likely to be present on site. Some plant species would have been overlooked especially spring and early summer flowering plants. The timing of the survey is considered good for recording invertebrates and good for recording vertebrate fauna. It is considered poor for recording breeding bird species and bird species overall as September is generally regarded a month when many summer breeding species are migrating south but winter migrants have yet to arrive.

### 4.3.2 Access

The entire site is publically accessible at all times so organising special access was not required.

## 4.4 Plant nomenclature and rarity

The *New Flora of the British Isles (third edition)* (Stace, 2010), the standard text, was consulted for plant nomenclature. English names have been used in preference to Latin (only quoted in the first instance) in order to facilitate readability of the report.

Any uncommon vascular plant species were identified in the London context using the *Flora of the London Area* (Burton, 1983). For national rarity *The New Atlas of the British & Irish Flora* (Preston, Pearman & Dines, 2002) was referred to (where a taxon appearing in 150 or less 10 x 10km squares was considered rare).

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<sup>4</sup> A standard format for recording relative abundance (Dominant, Abundant, Frequent, Occasional, Rare).

#### **4.5 Habitat and species rarity**

The UK Biodiversity Action Plan (UKBAP) was consulted for an overview of national habitat rarity. The London Ecology Unit's *Nature Conservation in Hammersmith and Fulham* (Archer & Keech, 1993) was also consulted to assess the primary habitat types and notable species found on the Scrubs.

Similarly, although an older publication, *The Wildlife of Scrubs Wood* by The Hammersmith & Fulham Group (of London Wildlife Trust) was consulted for detailed information on the geology, natural history and wildlife of this former part of the site.

## 5 Site descriptions and evaluation

Each of the sites are described and assessed for their biodiversity value below. It should be noted that the habitat descriptions within the text are indicative of the actual habitat as a whole on that given area but there will be variation across any given part of that habitat. Where this is significant in terms of biodiversity value, then certain areas may be described and assessed separately.

Maps of the location, site areas and habitats can be found in the appendices for all the sites surveyed.

Sites are evaluated using Table 5. Site Evaluation Criteria below to generate a value for their wildlife. This is based on ecological standards set out by the Chartered Institute of Ecology & Environmental Management (CIEEM).

Table 5. Site Evaluation Criteria

Site Evaluation Criteria	Wildlife Value
Site is known to support stable nationally or regionally (county) important species and/or species endangered on a local level (London Borough, district, etc.) and is managed in a wildlife sensitive way. (e.g. SSSI sites, most Sites of Metropolitan and Borough Grade I Importance for Nature Conservation)	Very High
Site is known to support stable locally important species and is managed in a wildlife sensitive way. (e.g. most Sites of Borough II and Local Importance for Nature Conservation)	High
Site has a typical assemblage of species but is not necessarily managed in a wildlife sensitive way and/or has habitat that would normally be considered high but is isolated from other habitats depriving it of its wildlife (e.g. railway linesides, waste ground areas, ornamental shrubberies, small isolated areas of greenspace)	Moderate
Site is limited in its wildlife usage or is managed in such a way that inhibits its wildlife value. (e.g. amenity grassland, ornamental gardens with limited 'wild' space)	Low
Site has very limited value due to lack of vegetation features that may support wildlife (hard surfaces such as paths, buildings and roads)	Negligible

## 5.1 TC8, TC9 & TC10 woods and surrounds

### 5.1.1 Description

This area represents the southern-most area of the Scrubs comprising mostly of young, closely planted woodlands surrounded by rough grassland.

The sections of woodland host a range of tree species such as birch *Betula sp.*, white poplar *Populus alba*, ash *Fraxinus excelsior*, pedunculate oak *Quercus robur* and willow *Salix sp.* These woods were bordered by thick shrubberies comprising of hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, dog rose *Rosa canina* and the non-native snowberry *Symphoricarpos albus* which made access very difficult. The interior of these woodland sections were very dark due to the very close planting resulting in a lack of an understorey or field layer. The edges of some of the woodlands hosted log piles which is a valuable and declining habitat for some species such as stag beetle *Lucanus cervus*.

The surrounding grasslands contained a mix of grass species typical of amenity swards such as creeping bent *Agrostis stolonifera*, meadow foxtail *Alopecurus pratensis*, cock's-foot *Dactylis glomerata* and wall barley *Hordeum murinum*, interspersed with common wildflowers such as white clover *Trifolium repens*, knotgrass *Polygonum aviculare*, autumn hawkbit *Scorzoneroides autumnalis*, dandelion *Taraxacum sp.*, greater plantain *Plantago major* and pineapple mayweed *Matricaria discoidea*.



Sections of the open grassland areas immediately east of the woods appeared to have been burnt off presumably through vandalism (see above).

Along the edges of the grassland and the adjacent hedgerow there was a good mix of wildflower species present, including common knapweed *Centaurea nigra*, teasel *Dipsacus fullonum*, mugwort *Artemisia vulgaris*, goosefoot *Chenopodium album*, ragwort *Senecio jacobea*, and upright hedge parsley *Torilis japonica*.



### 5.1.2 Ecological Assessment

The woodland sections here likely provide good cover for a range of fauna and almost certainly good nesting opportunities for birds due to the difficult access. However, the very closed nature of the planting has resulted in very dark conditions meaning a field layer is not present. This reduces the diversity of these woodlands and overall ecological quality. The surrounding grasslands are typical of amenity areas with some wildlife value. However, the edges of the grassland, particularly along the hedgerow, is rich in ranker vegetation and wildflower species which likely offer good foraging opportunities for pollinating insects such as butterflies and hoverflies.

## 5.2 TC4, TC5, TC6 & TC7 woods

### 5.2.1 Description

This series of small woodland sections bordered by rough grassland and thickets run along the southern edge of the Scrubs and in to the south-east corner.

The TC7 woodland section is primarily young trees grading into large thickets whereas the TC6 and TC5 woodlands are more accurately described as long rows of widely spaced trees or narrow strips of woodland with a very open nature (see below), although planting of young ash trees has taken place at the western end of these woodland sections. TC4 (known as Martin Bell's Wood) is a more structurally diverse woodland with open glades of rough bramble *Rubus fruticosus* scrub and rank vegetation.



The TC7 woodland section consists of thick dense shrubs of blackthorn, hawthorn, dogwood *Cornus sanguinea*, ash and pedunculate oak. The two woodland sections are bordered by rough grassland containing nettle *Urtica dioica*, black horehound *Ballota nigra*, A row of large poplars have been planted along the edge of the path opposite.

TC6 and TC5 woodland sections further east mostly comprised of horse chestnut *Aesculus hippocastanum*, London plane *Platanus x hispanica*, ash, silver maple *Acer saccharinum*,

common lime *Tilia X europea*. and turkey oak *Quercus cerris*, with a mixture of planted shrubs on along the side of the path, such as spindle *Euonymus europaeus*, hazel *Corylus avellana* and elder *Sambucus nigra*.

The rough grassland and woodland edge areas contained a typical mix of wildflower species, including creeping thistle *Cirsium arvense*, upright hedge parsley, mugwort, goosefoot with woodland edge species such as herb bennett *Geum urbanum*, hogweed *Heracleum sphondylium* and broad-leaved dock *Rumex obtusifolius*.

Around the edges of TC5 there was a more interesting mix flowering plant species such as stinking iris *Iris foetidissima*, wild carrot *Daucus carota* and common knapweed.



TC4 is the most ecologically valuable woodland on the Scrubs in terms of structural diversity and the presence of open glade spaces which likely create niche habitats for a range of invertebrates and birds (see above).

The presence of rush *Juncus* sp. and great willowherb *Epilobium hirsutum* suggests these glade areas are naturally damp and this is supported by the widely reported observation that surface water frequently collects in this south-east area of the Scrubs during the winter months. Large stands of common Michaelmas-daisy *Aster x salignus* were present here.

The small section of triangular-shaped amenity grassland adjacent to Wood Lane comprises of typical grassland grass and wildflower species with several mature London plane and ash with younger cherry. There are some planted stands of daffodil *Narcissus* sp. planted on the grassland.

### **5.2.2 Ecological Assessment**

The TC7 and part of TC6 woodland/thickets likely offer good cover for various fauna species and especially nesting and foraging areas for birds. Their very dense closed nature requires attention however and this hinders their ecological value which could be much improved.



Most of the TC6 and TC5 sections are too open and uniform in tree age to offer a high wildlife value although the rough grassland flowering plants are likely good areas of a range of invertebrates and pollinating species.

Overall, these areas combined offer a moderate wildlife value.

### 5.3 North-west corner woods

#### 5.3.1 Description

The small woodland areas in the north-west corner of the Scrubs are typical for the area being very dense and comprising of young trees surrounded by thick shrubs of blackthorn and bramble scrub. The centre of this area contains a tarmacked area which is a disused car park that has been colonised by vegetation.

The trees species in this area are varied but typical for the Scrubs with pedunculate oak, ash, horse chestnut, elder, silver maple and birch with the addition of sycamore *Acer pseudoplatanus*, white willow *Salix alba*, and hornbeam *Carpinus betulus*. The southern-most section of woodland is perhaps the most mature on the Scrubs with an understorey of ivy *Hedera helix*.

The rough grassland sections between the woodland areas contained a good mix of wildflower species, including mugwort, common Michaelmas-daisy, black horehound, yarrow *Achillea millefolium*, bristly ox-tongue *Helminthotheca echinodes*, perforate St. John's-wort *Hypericum perforatum*, shepherd's-purse *Capsella bursa-pastoris*, butterfly-bush *Buddleja davidii*, Canadian fleabane *Conyza sumatrensis*, rosebay willowherb *Chamerion angustifolium*, ribwort plantain *Plantago lanceolata*, knotgrass, autumn hawkbit and ragwort.

A single common lizard was observed basking on a reptile refugia mat numbered 45 in the northern part of the survey area.



### 5.3.2 Ecological Assessment

This area contains a good mix of open woodland areas and grassland which creates an interesting and varied habitat. The presence of the decaying tarmacked area has created an interesting habitat similar to a more natural rocky environment such as limestone pavement with plant species growing through the cracks (see above). This may provide a valuable habitat for some invertebrate species and perhaps good basking areas for reptiles which are known to be present.

The thicker woodland sections likely offer good nesting and cover for birds and other fauna species though this also results in a very poor under-storey of more light reliant woodland plant species. The presence of berry-bearing shrubs is likely to be valuable as a food resource for a wide range of fauna species during autumn and winter.

Overall the area provides a moderate value for wildlife.

### 5.4 Meadow area

The meadow area is more accurately described as an extensive open area of scrub, rough tussocky grassland, low shrubs and bramble thickets.

The area is especially important as a breeding ground for the closest population of meadow pipits to central London and other scarce London species such as lesser whitethroat which are regularly heard singing along in this area and along Lester's Embankment. During spring and autumn, the area is equally important as a feeding area for passage migrants including whinchat, ring ouzel and nightingale and in some years hosts winter residents such as short-eared owl (Lindo, pers. comms.).

The grassland comprised of a range of common species, such as cock's-foot, Yorkshire fog *Holcus lanatus*, meadow foxtail, creeping bent, broad-leaved dock, teasel, creeping thistle, hogweed, creeping buttercup *Ranunculus repens* and greater plantain. More localised species included hedge bedstraw *Galium album*, common toadflax *Linaria vulgaris* and field bindweed *Convolvulus arvensis*.



Some of the eastern path-side areas consisted of a much thinner sward of fine-leaved grasses with abundant wild carrot, common knapweed and autumn hawkbit, suggesting a less nutrient-rich grassland. This type of grassland is scarce in London and is of high biodiversity interest offering good habitats for more unusual invertebrates (see above).

The grassland was interspersed with hawthorn, blackthorn and dog rose shrubs and low domed bramble thickets which likely provide excellent nesting places for breeding bird species.

The eastern and most of the southern edge of the meadow area is bordered by hedgerows comprising of the aforementioned shrubs, with the addition of cherry *Prunus sp.* and guelder rose *Viburnum opulus*. Most of these species were heavily laden with berries during the survey which will offer an important food source for birds and mammals during the winter months. These hedgerows also act to break the open nature of the meadow area and provide protection, cover and corridors for wildlife.

A flock of 16 goldfinches were observed feeding on creeping thistle seed heads on the 14<sup>th</sup> (see below). A kestrel was also observed being mobbed by carrion crows on the same day.



#### **5.4.1 Ecological Assessment**

The meadow is by some margin the most ecologically important area on the Scrubs. The mixture of rough nutrient-poor grassland and open scrub is an extremely rare habitat this close to central London and its extent is unmatched for a considerable number of miles in any direction.

The area is clearly vital for passage migrant birds and breeding birds, many of which are red-listed and declining in the UK. Furthermore, this area is a key area for breeding meadow pipit and resident common lizard – two species which are in sharp decline across the country.

The abundance of and extent of the wildflowers here likely support regionally important populations of invertebrates, particularly butterflies. It is noted that dingy skipper butterfly and other scarcer butterfly species are known to breed here – further indication of the quality of the habitat in the meadow area.



## 5.5 Lester's Embankment, TC1 wood and Chats Paddock

### 5.5.1 Description

This thin strip of woodland, over-grown scrub and thickets runs along the northern border of the Scrubs forming part of the railway embankment.

There are a range of tree and shrub species along Lester's Embankment including cherry, apple *Malus sp.*, ash, pedunculate oak, white willow, poplar and blackthorn. The foot of the embankment is primarily bramble thickets with some hedge bindweed *Calystegia sepium* and nettle. The middle section of the slope is noted to host an extensive area of Japanese knotweed.

Chats Paddock is a small rectangular fenced area of thick undergrowth comprised of shrubs and trees. In addition to the species noted above, birch, rowan *Sorbus aucuparia*, gorse *Ulex europaeus*, dog rose and turkey oak are some of the species which were recorded here. Clearly a path used to be pass through the site but is no longer passable on account of the area now being over-grown (see below).

The TC1 woodland section runs east from Chats Paddock along the northern-most perimeter of the Scrubs. This is a thin strip of woodland with a characteristically closed and unmanaged condition resulting a lack of a field layer. Between the path and the edge of the woodland the grassland is rougher and contains common species such as greater plantain, common Michaelmas-daisy and creeping thistle. Several plants of hemlock *Conium maculatum* were also recorded in this area.

### 5.5.2 Ecological Assessment

The thick over-grown nature of this survey area is likely to offer excellent cover and nesting for birds and other fauna. Chats Paddock specifically has a good diversity of shrub and tree species. However, the presence of Japanese Knotweed along Lester's Embankment is a concern as the species can become dominant.

The closed and unmanaged nature of this survey area restricts its biodiversity value and overall the area is deemed as offering a moderate wildlife value.

## 5.6 Playing field and TC11 wood

### 5.6.1 Description

Most of the area comprises of very short amenity grassland which is used for sports and a western section of the area is devoted to model aircraft flying. The TC11 wood also sits in the western side as rounded island of trees in the otherwise totally open space.

The grassland is, as expected, very species poor with a mixture of perennial rye-grass *Lolium perenne*, daisy *Bellis perennis*, greater plantain, and dandelion.

At the edges of the playing fields, the sward becomes rougher where a few extra common wildflower species are occasional such as autumn hawkbit, and knotgrass.

The TC11 wood is very dense with closely planted trees (see below) consisting of cherry, blackthorn, hawthorn, hazel, birch, dogwood, field maple *Acer campestre*, ash, lime, and pedunculate oak.

### 5.6.2 Ecological Assessment

Most of the survey area is comprised of mown amenity grassland with low biological diversity. However, the TC11 wood will offer more value for wildlife in terms of cover, nesting and foraging opportunities. Overall this survey area is deemed as offering a low wildlife value.



## 5.7 TC2 & TC3 woods

### 5.7.1 Description

These thin strips of woodland represent a continuation of the aforementioned woodlands which border the Scrubs. As a result they are very similar in tree and shrub species composition and their closely-planted structure.

The northern area adjacent to TC2 (but separated by the circular path) includes a series of large thickets/grading into young woodlands. These are bordered by thick bramble scrub with a typical assemblage of poplar, white willow, elder, dog rose, ash, birch, hawthorn, blackthorn and pedunculate oak. In between these sections of woodland are areas of rough grassland comprising of species such as hogweed, creeping thistle and nettle at their edges with a progressively finer sward containing autumn hawkbit, wild carrot, ribwort plantain and grasses, such as common bent *Agrostis capillaris* and timothy *Phleum pratense*. These areas are proposed for heathland planting (see below).

The TC2 and TC3 woodlands themselves are densely planted and in addition to the tree species mentioned above, contain some individuals of London plane and elm *Ulmus procera*.

### **5.7.2 Ecological Assessment**

The presence of the thick bramble scrub and generally dense undergrowth patches (see above), likely offers excellent nesting and cover for birds and other fauna groups. These areas are also interspersed with berry-bearing shrubs which will provide an important food source during autumn and winter.



The bordering TC2 and TC3 woodlands will offer similar opportunities and especially for species reliant on dead wood and leaf litter.

The rough grassland areas contain an interesting mix of grasses and wildflowers providing good habitats for invertebrates such as butterflies and ground beetles (see above).



## 6 Proposed Enhancements Evaluation

### 6.1 Japanese knotweed removal

The quantity of Japanese knotweed along Lester's Embankment is extensive, covering a large area that is clearly visible from the lower path. The long-term impacts of allowing the patch to remain could result in further spread resulting in the smothering of native shrubs and plants on the south-facing bank, ultimately reducing the biodiversity value of the area. The 3-year eradication programme proposed is advisable and London Wildlife Trust supports this decision provided it is carried out with utmost sensitivity to minimise the impacts to wildlife and especially breeding birds present in the immediate area.

### 6.2 Heathland type planting

The small proposed area for heathland planting is deemed to be feasible and appropriate given the presence of thinner acid soils as indicated by the grassland community present. Rather than plug planting heather *Calluna vulgaris*, it may be preferable to make small scrapes in certain areas to expose subsurface soils and then strew cut heather brash (before it has set seed) over these. As evidenced by the Trust's work at Bramley Bank Nature Reserve, that if conditions are right the heather seeds take quickly to the bare soil and can form a successful pioneer community.

Further to the initially proposed planting area, two smaller areas further south should also be considered for similar planting to increase the overall habitat area and therefore bolster the likelihood of habitat longevity and connectivity.

### 6.3 Woodland thinning and glade creation

All woodlands across the Scrubs require extensive thinning. Currently the canopies are too thick due to unnaturally close planting and the trees are largely even-aged. The proposed management techniques will be very effective in developing structural diversity within the woodlands through increasing light penetration to the field layer. This should develop opportunities for woodland plants to colonise and attract associated woodland species currently absent or present in low numbers.

This process of colonisation could be accelerated by introducing – through seeding or plu-planting - native woodland plant species such as primrose *Primula vulgaris*, dog violet *Viola canina* and common bluebell *Hyacinthoides non-scripta*.

### 6.4 Species-rich grassland creation

The areas of grassland proposed for species-enrichment are suitable, offering a long sward and low foot-fall to provide suitable conditions for wildflowers to proliferate.

This could be achieved through plug planting though this would be extremely labour-intensive over such large areas and may be ineffective if the change in soil, moisture etc. is too great for the adult plants to endure.

A technique regularly employed by the Trust involves the process called green hay strewing where fresh hay from a suitable species-rich donor meadow is strewn across the low-diversity grassland in areas where the top-soil is scraped back to expose the bare sub-soils. The seeds present in the hay fall down to areas of bare soil and germinate naturally. This can be achieved over larger areas and can result in up to 70% of species from the donor meadow being transferred to the new meadow area.

## 6.5 Hedgerow planting

Following a nationwide decline in hedgerows through the consolidation of small arable fields, hedgerows are now an important habitat offering cover, forage and connectivity value through the landscape. The proposed hedgerow planting lengthens the current hedgerow extent and will act to support local biodiversity through adding a valuable protective feature along the border of the meadow areas.

The key to maximising the biodiversity of hedgerows to plant a diverse mix of shrubs and small trees to offer food sources throughout the year.

## 6.6 Scrape/ditch creation

The Scrubs are a naturally dry area for most of the year with no permanent standing water present. The gentling sloping topography causes water to drain away from most of the site but regularly collects in the south-west corner which is low-lying and underlain with clay. Developing scrapes that will create wet areas or perhaps ephemeral pools is an excellent biodiversity enhancement that will benefit a wide variety of wildlife currently present but could also attract new species to the area, particularly those reliant on seasonal water sources such as amphibians and some semi-aquatic plant species.

Over time, a marshland vegetation community may develop – a valuable habitat not currently present on the Scrubs. Should this develop, bolstering this community with the introduction of some plant species may be preferable such as purple loosestrife *Lythrum salicaria*, water mint *Mentha aquatica*, marsh woundwort *Stachys palustris* and perhaps even yellow flag *Iris pseudacorus* depending on the depth of the scrapes/ditches excavated.

## 7 Recommended biological surveys

In order to fully characterise the biological value of the area earmarked for HS2 works, we recommend a series of biological surveys to be carried out during 2017.

### 7.1 Reptile Survey

The northern edge of the scrubs along Lester's Embankment and the adjacent meadow area (western scrub and rough grassland area) has historically been an important area for common lizard. Indeed, this survey recorded a single common lizard beneath existing refugia. However, the current population size is not fully known. Furthermore, other species such as slow-worm and grass snake may also be present. All reptile species are fully protected by UK law through the Wildlife and Countryside Act 1981 (as amended) meaning it is illegal to kill, injure or trade in the aforementioned species and are required to be surveyed for as part of the planning process where necessary mitigation may be required.

#### 7.1.1 Methodology

Based on National Amphibian and Reptile Recording Scheme (NARRS) methodology, surveys would be carried out using a mixture of refugia deployment and visual observation.

#### When

April is best as the air temperature is lower meaning reptiles are required to bask for longer.

#### Frequency

4 visits would be required to characterise population sizes.

### 7.2 Breeding Birds Survey

One of the key aspects of the biological value of the Scrubs is the presence of important breeding bird populations, particularly meadow pipit, lesser whitethroat, common whitethroat and song thrush. A range of other rare and scarce bird species pass through the Scrubs and use the meadow area in particular as a stop-over during the migration periods in spring and autumn (see chapter 5.4 *Meadow Area*).

All nesting birds are protected under UK law through the Wildlife and Countryside Act 1981 (as amended) meaning it is illegal to intentionally take, damage or destroy the nest of any wild bird while it is in use or being built. Nesting birds must be surveyed for as part of the planning process where necessary mitigation may be required.

#### 7.2.1 Methodology

Based on British Trust for Ornithology Common Bird Census (CBC) method (Marchant, 1983), surveys would be carried out by recording behavioural observations along one or more transects in the affected area. This would establish potential territories by analysing 'clusters' of point records indicative of nesting behaviour.

#### When

Any time between March and July

#### Frequency

8 visits would be required to characterise the number of breeding birds.

## 7.3 Hedgehog Survey

The GiGL datasearch requested for this report highlighted a record for hedgehog *Erinaceus europaeus* from 2002. Although this is now an old record, there is a distinct possibility that the Scrubs may support a small population of hedgehogs as the species is nocturnal and rarely encountered unless they are searched for. The habitat is ideally suited to hedgehogs with a mixture of thickets for cover and open grassland areas in which to hunt. Furthermore, the presence of numerous connected garden spaces in adjacent residential areas may provide extra foraging habitat.

Hedgehogs are nationally protected under Schedule 6 of the Wildlife and Countryside Act (1981, as amended) and the Wild Mammals Protection Act (1996). They are also listed as a priority species in the 2007 UK Biodiversity Action Plan (BAP) and London BAP (2008).

### 7.3.1 Methodology

Based on PTES Guidance for detecting hedgehogs using footprint tracking tunnels (2015)<sup>5</sup> this survey technique can be used to establish presence but not abundance. Baited 'tunnels' are deployed which establish presence by recording footprints.

If 10 baited tunnels are set up in 1km<sup>2</sup> for 5 consecutive nights and no hedgehog footprints are detected, the surveyor can be 95% sure hedgehog are absent from the area.

- Must be checked daily
- Positioned along linear features at edge of shrubs/scrub, concealed from view

#### When

Any time between April and October

#### Frequency

5 consecutive visits would be required to achieve statistical significance.

## 7.4 Bat Survey

It is very likely that the Scrubs are used by bats for foraging but a survey by a licensed bat specialist (LWT can offer this service) will be required to adequately confirm this and the range of species present. It may also be appropriate (based on the bat specialist's advice) to carry out a survey of potential roost sites to ascertain whether the Scrubs supports populations in situ.

### 7.4.1 Methodology

TBC by bat specialist.

#### When

Any time between March and October

#### Frequency

TBC by bat specialist.

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<sup>5</sup> <https://ptes.org/wp-content/uploads/2015/06/Guidance-for-detecting-hedgehogs-using-tracking-tunnels.pdf>

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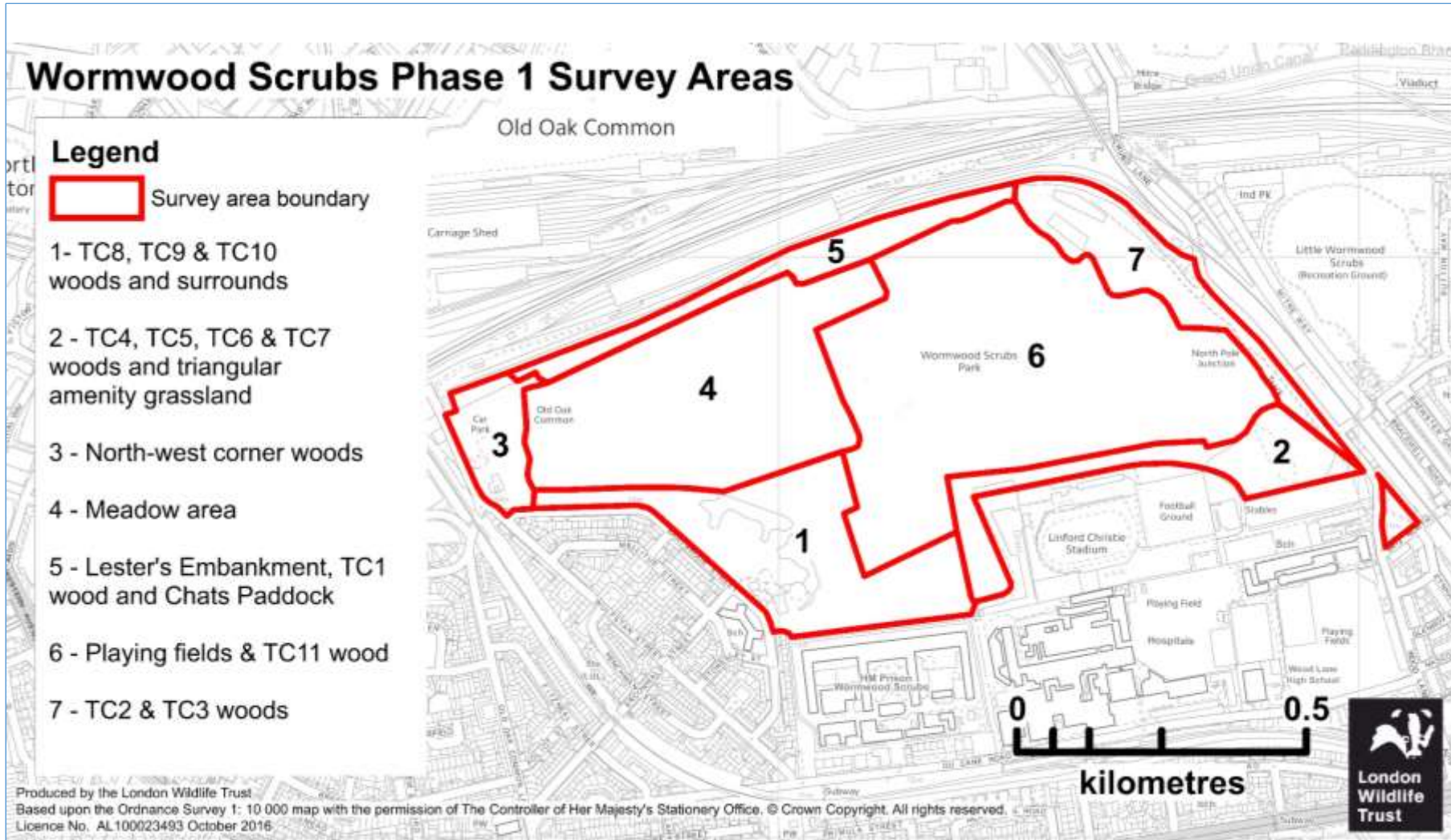
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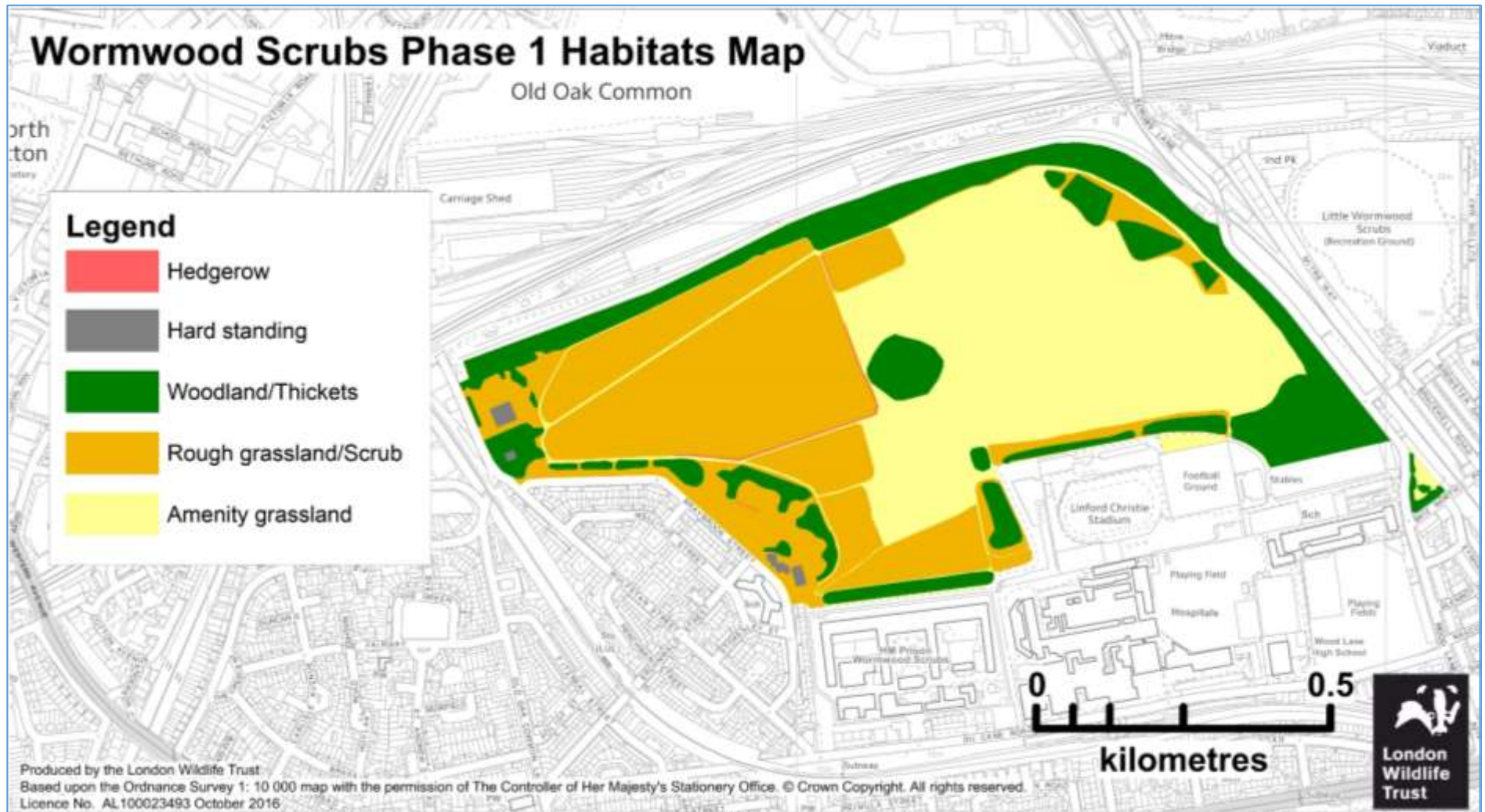
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## 9 Appendices

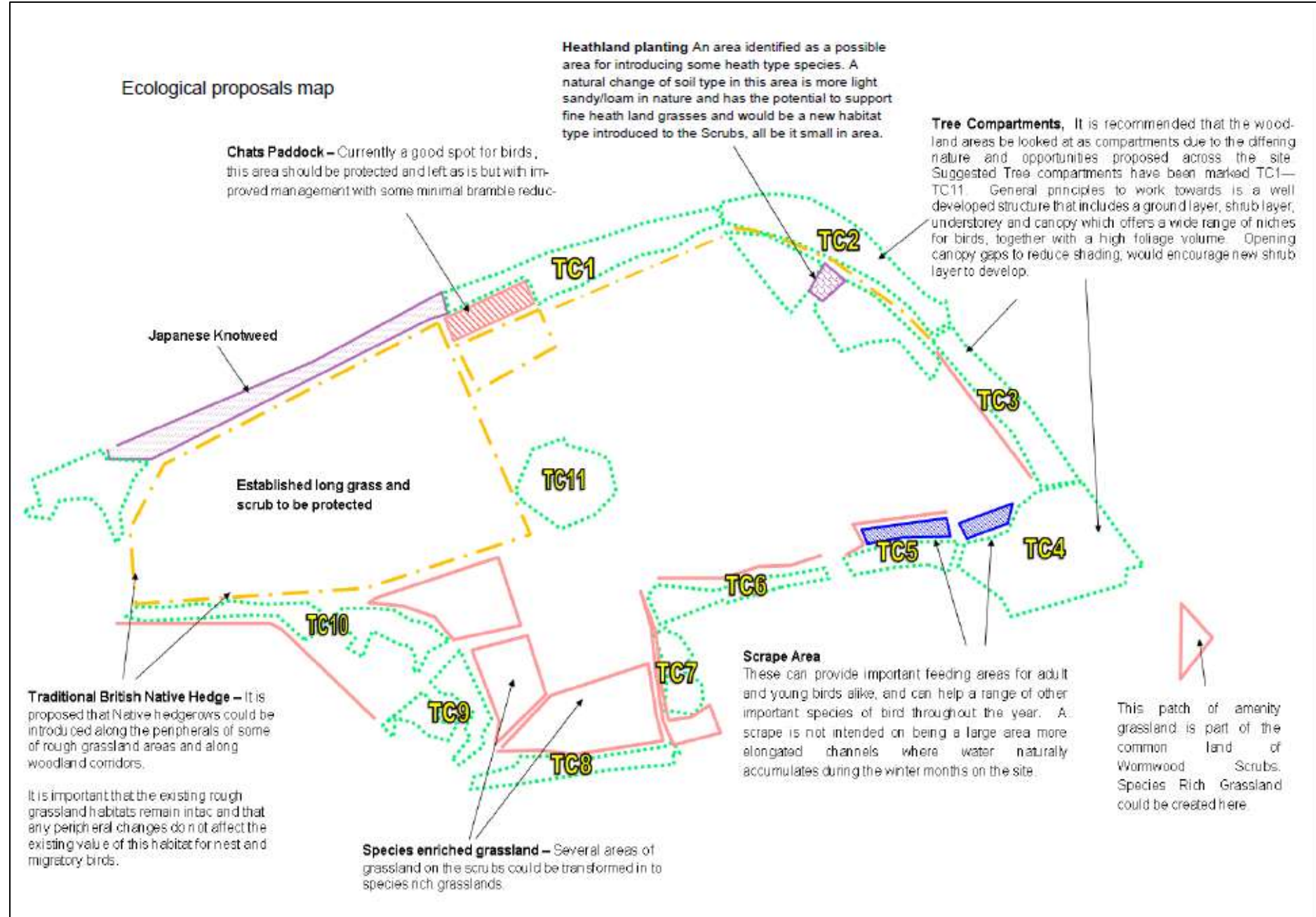
### Appendix 1: Maps – Survey, habitat and proposed enhancements







Ecological proposals map





## Appendix 2: Wormwood Scrubs plant species and abundance lists

		Species abundance in each habitat							
		(DAFOR Scale: D = Dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)							
Scientific name	Common name	Playing fields and TC 11 wood	Meadow area	Lester's Embankment, TC1 wood and Chats Paddock	TC2 and TC3 woods	TC4,TC5, TC6 and TC7 woods	TC8, TC9 and TC10 woods and surrounds	North-west corner woods	Notes
<i>Acer campestre</i>	field maple	R		R	R	R	O	R	
<i>Acer pseudoplatanus</i>	sycamore	R		O	O			R	
<i>Acer saccharinum</i>	silver maple				R	R			Planted
<i>Archillea millefolium</i>	yarrow	R	F	O		O		O	
<i>Aesculus hippocastanum</i>	horse-chestnut				R	O		O	Planted
<i>Agrostis stolonifera</i>	creeping bent	O	F	O	O	F	F		
<i>Alopecurus pratensis</i>	meadow foxtail	R	F	O		O	O	O	
<i>Artemisia vulgaris</i>	mugwort	O	F		F	O	O	F	
<i>Aster x salignus</i>	common Michaelmas-daisy	O	O		O	F	F	F	

		Species abundance in each habitat							
		(DAFOR Scale: D = Dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)							
Scientific name	Common name	Playing fields and TC 11 wood	Meadow area	Lester's Embankment, TC1 wood and Chats Paddock	TC2 and TC3 woods	TC4,TC5, TC6 and TC7 woods	TC8, TC9 and TC10 woods and surrounds	North-west corner woods	Notes
<i>Ballota nigra</i>	black horehound		O		R	O		O	
<i>Bellis perennis</i>	daisy	O	O		O				
<i>Betula sp.</i>	birch species	R		O	O	O	O	R	
<i>Capsella bursa-pastoris</i>	shepherd's-purse		R					R	
<i>Carpinus betulus</i>	hornbeam							O	
<i>Centaurea nigra</i>	common knapweed		F	O			O		
<i>Chenopodium album</i>	fat-hen		O	O	O	O	O	O	
<i>Cirsium arvense</i>	creeping thistle	R	F	O		F	F	F	
<i>Convolvulus arvensis</i>	field bindweed		O					O	
<i>Conyza sumatrensis</i>	Guernsey fleabane				O			O	
<i>Cornus sanguinea</i>	dogwood	R		O	O	O	O		Planted
<i>Corylus avellana</i>	hazel	O				R	O		

		Species abundance in each habitat (DAFOR Scale: D = Dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)							
Scientific name	Common name	Playing fields and TC 11 wood	Meadow area	Lester's Embankment, TC1 wood and Chats Paddock	TC2 and TC3 woods	TC4,TC5, TC6 and TC7 woods	TC8, TC9 and TC10 woods and surrounds	North-west corner woods	Notes
<i>Crataegus monogyna</i>	hawthorn	O	F		O	O	O		
<i>Dactylis glomerata</i>	cock's-foot	O	A		O	A	F	O	
<i>Daucus carota</i>	wild carrot	R	F	F		O			
<i>Dipsacus fullonum</i>	teasel		F	O			O		
<i>Epilobium hirsutum</i>	great willowherb					R			
<i>Epilobium sp.</i>	willowherb species		O			O		O	
<i>Euonymus europaeus</i>	spindle			R	O	R			
<i>Fallopia japonica</i>	Japanese knotweed		O	F					
<i>Fraxinus excelsior</i>	ash	R			O		F		Planted
<i>Galium aparine</i>	hedge bedstraw		R					R	
<i>Galium odoratum</i>	woodruff					O			
<i>Geranium pratense</i>	meadow crane's-bill					O			

		Species abundance in each habitat							
		(DAFOR Scale: D = Dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)							
Scientific name	Common name	Playing fields and TC 11 wood	Meadow area	Lester's Embankment, TC1 wood and Chats Paddock	TC2 and TC3 woods	TC4,TC5, TC6 and TC7 woods	TC8, TC9 and TC10 woods and surrounds	North-west corner woods	Notes
<i>Geum urbanum</i>	wood avens					O		R	
<i>Hedera helix</i>	ivy			O				O	
<i>Helminthotheca echinodes</i>	bristly ox-tongue		O					O	
<i>Heracleum sphondylium</i>	hogweed		A	F		O		F	
<i>Holcus lanatus</i>	Yorkshire fog		A					O	
<i>Hordeum murinum</i>	wall barley		O			F		O	
<i>Hypericum perforatum</i>	perforate St. John's-wort		O					O	
<i>Hypochaeris radicata</i>	cat's-ear	R	O				R		
<i>Iris foetidissima</i>	stinking iris					O			
<i>Lolium perenne</i>	perennial rye-grass	F	F	F	F	F	F		

		Species abundance in each habitat (DAFOR Scale: D = Dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)							
Scientific name	Common name	Playing fields and TC 11 wood	Meadow area	Lester's Embankment, TC1 wood and Chats Paddock	TC2 and TC3 woods	TC4,TC5, TC6 and TC7 woods	TC8, TC9 and TC10 woods and surrounds	North-west corner woods	Notes
<i>Matricaria discoidea</i>	pineapple mayweed		O				F		
<i>Narcissus sp.</i>	daffodil species					R			
<i>Phelum pratense</i>	timothy	O	F		O	O	O		
<i>Plantago lanceolata</i>	ribwort plantain	O	O			O	O	O	
<i>Plantago major</i>	greater plantain	F	F	A	A	F	F	A	
<i>Platanus x hispanica</i>	London plane				F	O			
<i>Polygonum aviculare</i>	knotweed	O	O	F	F	F	F	F	
<i>Populus alba</i>	white poplar	O					O		Planted
<i>Prunus sp.</i>	cherry species	R		O	O	F	F		Planted
<i>Prunus spinosa</i>	blackthorn	O	O	F	F		O	F	
<i>Quercus cerris</i>	turkey oak	R				O			Planted
<i>Quercus robur</i>	pendunculate oak			O		O	R		Planted

		Species abundance in each habitat (DAFOR Scale: D = Dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)							
Scientific name	Common name	Playing fields and TC 11 wood	Meadow area	Lester's Embankment, TC1 wood and Chats Paddock	TC2 and TC3 woods	TC4,TC5, TC6 and TC7 woods	TC8, TC9 and TC10 woods and surrounds	North-west corner woods	Notes
<i>Quercus petraea</i>	sessile oak							R	
<i>Rosa canina</i>	dog rose	O	O	O	O	F	O		
<i>Rubus fruticosus agg.</i>	bramble species	O	A	F	F	F	O	F	
<i>Ranunculus acris</i>	meadow buttercup			R		R			
<i>Ranunculus repens</i>	creeping buttercup	O	O		O	O			
<i>Rumex obtusifolius</i>	broad-leaved dock		F			O	O	O	
<i>Rumex sanguineus</i>	wood dock					O			
<i>Salix alba</i>	white willow			O	O		O	O	
<i>Salix sp.</i>	willow species	R					O		
<i>Sambucus nigra</i>	elder	R				O		O	
<i>Scorzoneroide autumnalis</i>	autumn hawkbit	O	F			O	O	O	

		Species abundance in each habitat							
		(DAFOR Scale: D = Dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)							
Scientific name	Common name	Playing fields and TC 11 wood	Meadow area	Lester's Embankment, TC1 wood and Chats Paddock	TC2 and TC3 woods	TC4,TC5, TC6 and TC7 woods	TC8, TC9 and TC10 woods and surrounds	North-west corner woods	Notes
<i>Senecio jacoboea</i>	common ragwort		O			R	R	F	
<i>Sonchus asper</i>	prickly sow-thistle					O			
<i>Sonchus oleraceus</i>	smooth sow-thistle					O			
<i>Symphoricarpos albus</i>	snowberry			O	R		O		
<i>Taraxacum agg.</i>	dandelion	O	O			F	O		
<i>Tilia cordata</i>	small-leaved lime					O			Planted
<i>Torilis japonica</i>	upright hedge parsley		O			O	R		
<i>Trifolium repens</i>	white clover	O	O		R	F	F		
<i>Ulex europaeus</i>	gorse			R					
<i>Ulmus procera</i>	English elm				R				
<i>Urtica dioica</i>	common nettle					O	O		
<i>Viola odorata</i>	sweet violet					O			

		Species abundance in each habitat (DAFOR Scale: D = Dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare)							
Scientific name	Common name	Playing fields and TC 11 wood	Meadow area	Lester's Embankment, TC1 wood and Chats Paddock	TC2 and TC3 woods	TC4,TC5, TC6 and TC7 woods	TC8, TC9 and TC10 woods and surrounds	North-west corner woods	Notes
<i>Virburnum opulus</i>	guelder rose						O		



## 10 Capability statement

### Company and report information

London Wildlife Trust delivers a variety of contracts across the Greater London area, such as phase 1 habitat surveys, landscape design and habitat creation. We understand the urban as well as the suburban and rural environments as they relate to biodiversity and are well placed to deliver ecological surveys across the Greater London area.

London Wildlife Trust is the only charity dedicated solely to protecting and the capital's wildlife and improving wild spaces, engaging London's diverse communities through access to our nature reserves, campaigning, volunteering and outdoor learning. We therefore have a specific interest in ensuring that all land holders and managers manage their land for the benefit of wildlife and people.

The recommendations set out within this report broadly reflect London Wildlife Trust's core principles and objectives.

The information in this document is, to the best knowledge of the author and London Wildlife Trust correct at time of writing.

The ecological recommendations offered in this document are based on known wildlife conservation good practice and where applicable, the current legislation on protected species but should not be treated as legal advice. The report may also contain additional, non-statutory, recommendations with regards to protected species and/or habitats. These are clearly identified as optional where they are offered.

London Wildlife Trust does not take any responsibility for future decisions about the site that is the subject of this assessment.

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### Staff capability

All ecologists are members of the Chartered Institute of Ecology & Environmental Management (CIEEM), at the appropriate level, and follow the CIEEM code of professional conduct when undertaking ecological work.

## 11 Staff details

Name and contact details	Role in team	Relevant experience
<p><b>Karen Hall</b></p> <p>Tel: 020 7803 4284</p> <p><a href="mailto:khall@wildlondon.org.uk">khall@wildlondon.org.uk</a></p>	<p><i>Project Manager</i></p> <p>Client liaison, management, quality control.</p>	<p>Many years project management experience across a range of sectors including, nature conservation, local authority and private sector.</p>
<p><b>Mike Waller</b> BSc</p> <p>Grad CIEEM</p> <p>Tel: 07505 028037</p> <p>Email:</p> <p><a href="mailto:mwaller@wildlondon.org.uk">mwaller@wildlondon.org.uk</a></p>	<p><i>Conservation ecologist</i></p> <p>Data collection, Analysis and evaluation and report delivery.</p>	<p>Extensive experience of surveying techniques and land management. Excellent identification skills across a broad range of taxa with a specialisation in vascular plants. Competent in all MS programs.</p>
<p><b>Mathew Frith</b> BSc, MCIEEM, CEnv</p> <p>Tel: 020 78034292</p> <p>Email:</p> <p><a href="mailto:mfrith@wildlondon.org.uk">mfrith@wildlondon.org.uk</a></p>	<p><i>Project advisor</i></p> <p>Quality control.</p>	<p>Nearly 28 years' experience of urban nature conservation policy and practice, including land management issues of parks and inner urban sites. Phase 1 survey experience and site assessment. Green Flag Award judge.</p>