



WORMWOOD SCRUBS

Breeding Birds and Hedgehog Survey Report

October 2018



Male blackcap (photo credit: Amy Lewis)

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Protecting London's **Wildlife** for the future

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1 Executive Summary

London Wildlife Trust (hereafter referred to as 'the Trust') was commissioned by the London Borough of Hammersmith & Fulham (LBHF) to undertake a breeding birds and hedgehog survey on Wormwood Scrubs, hereafter referred to as 'the Scrubs'. The surveys were commissioned to reaffirm the importance of the Scrubs for breeding birds and hedgehogs in light of proposed impacts to the Scrubs through the construction and operation of High Speed Rail 2 ('HS2') and inform appropriate interventions to mitigate the impacts that may arise from these impacts.

The survey effort was focussed entirely across the area of scrubby tall grassland located in the western portion of the site and the adjacent railway ('Lester's') embankment. This is thought to be the area of greatest biodiversity value present on the Scrubs due its broad expanse of naturalistic vegetation which supports a number of species rare in this area of London. The catalyst for the work is because a linear area running along the southern edge of the embankment is earmarked for the HS2 Stamford Brook sewer realignment¹.

Breeding bird and hedgehog surveys were carried out between May and September 2018 by Mike Waller.

The broad results of the surveys are as follows:

Breeding birds

A total of 19 bird species were observed displaying one or more breeding behaviours of which nine were confirmed as breeding on site, seven were probably breeding on site and a final three species were possibly breeding on site. Additionally, blue tit *Cyanistes caeruleus*, great tit *Parus major*, Eurasian magpie *Pica pica* and wren *Troglodytes troglodytes* juveniles were observed strongly suggesting breeding had been successful on site for these species.

No meadow pipits *Anthus pratensis* were observed on any of the surveys – as in 2017.

The survey reaffirmed that the most important breeding area for birds is Lester's Embankment where sufficiently dense vegetation remains inaccessible from the disturbance brought about by the high numbers of dog walkers and joggers. The severe effect of visitor pressure on the Scrubs is thought to be the reason why breeding bird numbers are lower on the open flat area despite abundant suitable nesting locations.

Provided the HS2 works are not carried out during the bird breeding season (March – August), breeding birds are not likely to be directly disturbed by the construction processes. However, the temporary removal of habitat along the base of the embankment may lower the ecological quality of the site in the long-term, thus reducing the suitability of the area for breeding birds.

Hedgehog

As in 2017, spotlighting surveys did not confirm the presence of hedgehog *Erinaceus europaeus*.² Although the site supports suitable foraging and nesting habitats for hedgehogs, it is heavily disturbed (in particular from dog walkers and sports activities) and the surrounding roads and railway line likely pose significant barriers to the movement of hedgehogs (which can roam over 1km over one night).

¹ The proposal is described in Supplementary Environmental Statement 3 ("SES") and Additional Provision 4 Environmental Statement Volume 2 Community forum area reports CFA4 Kilburn (Brent) to Old Oak Common at 5.2.1 to 5.2.10 (pp 51-52), 5.2.105 – 5.2.117 (pp 63-65) and in Table 3 Summary of amendments.

² More correctly defined as West European hedgehog.

2 Introduction

The Trust was commissioned by LBHF to undertake a breeding birds and hedgehog survey in the western scrub area of Wormwood Scrubs in order to reaffirm the importance of the site for breeding birds and hedgehog and inform mitigation measures (part of which is earmarked for the HS2 sewer realignment).

2.1 Rationale for repeat surveys

The breeding birds survey undertaken by the Trust in 2017 was conducted outside of the optimal survey period and thus a resurvey was commissioned to be carried out over the optimal breeding period. Accurately confirming the importance of the site for breeding birds is a key aspect to successfully mitigating the effect of the sewer realignment described below and also for guiding habitat enhancement works.

Additionally, it was decided that a repeat hedgehog survey would be undertaken using the spotlighting technique as the site appears to provide extensive suitable habitat for this declining species.

2.1.1 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 *Anthus pratensis*, lesser whitethroat *Sylvia curruca*, common whitethroat *S. communis* and song thrush *Turdus philomelos*. 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.

All nesting birds are protected under UK law through the Wildlife & 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.

2.1.2 Hedgehog survey

The GiGL data search [requested for the Phase 1 Habitat report] highlighted a record for hedgehog 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).

2.1.3 HS2 Stamford Brook sewer realignment

A significant strip of land adjacent to the railway lines (which run along the northern edge of the Scrubs) is likely to be temporarily destroyed and surrounding areas heavily disturbed by the Stamford Brook sewer realignment as part of the Kilburn (Brent) to Old Oak Common section of HS2 construction measures. The land under construction usage will run from Chats Paddock south-west along Lester's Embankment and then turn 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 (see Appendices).³

2.2 Site Details

2.2.1 Location

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 which lies to the east, severed by railways and Scrubs Land (A219)/Mitre Way).

2.2.2 Designations

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*'⁴. 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.⁵ 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.

2.2.3 Management

Currently the area is managed by Hammersmith & Fulham Council in collaboration with Groundwork London. The site is championed by the Friends of Wormwood Scrubs who aim to protect it from damage, and continue to fight on-going development plans that infringe upon the Scrubs' natural character, biodiversity and people's tranquil enjoyment of the site.

2.2.4 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, created as part of the earlier Channel Tunnel Rail Link works (for North Pole Depot) in the early 1990s, which marks the northern edge of the site is steep and approximately 15m high. It became known as Lester's Embankment after a successful campaign by Lester Holloway in 1989 to stop the area being turned into a British Rail depot for the Channel Tunnel. The Channel Tunnel Bill was changed at the committee stage to effectively 'freeze' any land clearance after consistent lobbying by the then schoolboy.

³ Map number: CT-05-009a. Map Name: Construction Phase SES3 and AP4 ES

⁴ Quote taken from the Wormwood Scrubs Act 1879.

⁵ In addition, proposed structures require the consent of the borough council and the Secretary of State for Defence.

2.2.5 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.*'⁶

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.

2.2.6 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. Wilder areas form much of the northern and western boundaries as well as the grassland on the western flank.

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 bird-watching in the western scrub and rough grassland area (where the survey effort was focussed) which attracts unusual migrant species during spring and summer.

⁶ 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.

3 Surveys

3.1 Survey details

The broad survey area covers the entire western scrub zone as outlined below. Breeding bird surveys were completed between April and June, starting at 7:30am. The two hedgehog surveys were carried out in September starting at 8:30pm.

Table 1 provides details for each survey visit.

Table 1. Details of survey visits

Survey type	Survey date	Weather Conditions	Time surveyed (hours/minutes)	Comments
Breeding Bird	11 th April	Over-cast, very wet, still, 9°C	2 hours 30 minutes	None.
Breeding Bird	19 th April	Sunny, dry, still, 15°C	2 hours 30 minutes	Multiple dog walkers across survey area including off paths in scrub. Loud fast drone being used throughout survey period in model aircraft flying zone but also over scrub area at times.
Breeding Bird	25 th April	Sunny, dry, breezy, 10°C	2 hours 30 minutes	Multiple dog walkers across survey area including off paths in scrub. Loud fast drone being used from around 8:30 model aircraft flying zone but also over scrub area at times.
Breeding Bird	3 rd May	Sunny spells, dry, still, 8°C	2 hours 30 minutes	Multiple dog walkers across survey area including off paths in scrub. No drones today.
Breeding Bird	10 th May	Sunny spells, dry, breezy, 13°C	2 hours 30 minutes	Fewer dog walkers than during previous surveys.
Breeding Bird	17 th May	Over-cast, dry, breezy, 16°C	2 hours 30 minutes	None.
Breeding Bird	7 th June	Over-cast, dry, breezy, 13°C	2 hours 30 minutes	None.
Breeding Bird	13 th June	Sunny, dry, still, 15°C	2 hours 30 minutes	Model plane and helicopter being flown around throughout survey period.
Hedgehogs (Spotlighting)	5 th September	Dry, still, 16°C	2 hours	None.

Survey type	Survey date	Weather Conditions	Time surveyed (hours/minutes)	Comments
Hedgehogs (Spotlighting)	19 th September	Dry, still, 13°C	2 hours	None.

3.2 Survey timings

Due to the later-than-expected date of commissioning, the 2017 surveys began nearly two months later than expected. The 2018 surveys aimed to ameliorate the effect of surveying during a suboptimal time and instead focus the survey effort during April, May and early June when activity is at its highest and breeding behaviour is thus most conspicuous. The breeding bird survey timings were deemed as **optimal**. However, it is worth noting that some species will breed throughout the summer.

The hedgehog surveys were carried out in the later activity period for the species. In September/October both adults and juveniles (born that year) are active, therefore the survey timings were deemed as **optimal**.

3.3 Survey limitations

3.3.1 Access

The entire site is publically accessible at all times so organising special access was not required. However, access to Lester's Embankment and much of the central area of the scrubland is largely impossible due to the density of the scrub (particularly bramble), meaning birds were viewed through binoculars from the nearest accessible point (typically one of the many paths). For this reason, some nesting locations and/or breeding activity is likely to have been missed.

3.4 Survey methodologies

3.4.1 Breeding Bird Survey (BBS)

Based on British Trust for Ornithology Common Bird Census (CBC) method (Marchant, 1983), surveys are carried out by recording behavioural observations indicative of breeding territories (e.g. singing males, nest building, aggressive interactions) on two or more occasions in a suitably sized area (dependent on species) along a predetermined transect route, designed to cover as much of the survey area as possible (see Appendices for transect route map). This would establish potential territories by analysing 'clusters' of point records indicative of nesting behaviour.

Breeding potential was identified into three categories; confirmed, probable and possible. These are described below.

Confirmed breeding is claimed under the following circumstances:

- A nest was found with at least one adult present or it had eggs or nestlings present;
- Adults were seen carrying nesting material towards a suitable breeding habitat/location;
- Adults were seen carrying food towards a suitable breeding habitat/location;
- Nestlings were heard when an adult bird approached an area of suitable breeding habitat.

Probable breeding is claimed under the following circumstances:

- Male birds singing from an area with suitable habitat on at least three visits;
- Adult birds showing display activity in an area with suitable habitat;
- Adults (typically male) birds being territorial, fighting and chasing other male birds of the same and other species where this would be relevant;
- Adult birds observed mating.

Possible breeding is claimed under the following circumstances:

- Male birds (generally non-migratory species) singing from an area with suitable habitat on less than three visits;
- Pair of birds (generally non-migratory species) seen in an area with suitable habitat but not singing on at least four visits.

The presence of young juvenile birds was also used with the above criteria to assist with the categorisation of breeding potential. Young that had fledged were considered evidence of breeding success.

For the purpose of this report, birds that are free-flying escapes or birds with an escaped parentage are referred to as feral.

3.4.2 Hedgehog

Survey methodology was based on UK BAP Mammals: Interim guidance for survey methodologies, impact assessment and mitigation (The Mammal Society, 2012).

Surveys included two spotlighting sessions which were completed at dusk in early and late September and lasted for 2 hours. Animals were searched for using a high power torch and a Flir E60 thermal camera. Active listening for animals moving amongst the vegetation was also applied. The transect route walked was the same as that walked during the breeding bird surveys (see Appendices for map).

NOTE: Surveys provide a method for confirming presence of species but are unable to confirm absence.

3.5 Aims of the surveys

The aims were to:

- Reaffirm the importance of the western scrub area for breeding birds;
- Assess the importance of the site for hedgehogs;
- Make incidental recording of other fauna sightings; and
- Identify areas of highest ecological sensitivity and importance in relation to the distribution of the target species/species group.

4 Results

4.1 Breeding birds

A total of 19 bird species were observed displaying one or more breeding behaviours over the course of the surveys, of which nine were confirmed as breeding on site, seven were probably breeding on site and final three species were possibly breeding on site. Those species were as follows (green: confirmed breeding, blue: probable breeding and orange: possible breeding):

- blue tit *Cyanistes caeruleus*
- common blackbird *Turdus merula*
- European goldfinch *Carduelis carduelis*
- Eurasian magpie *Pica pica*
- great tit *Parus major*
- Eurasian wren *Troglodytes troglodytes*
- long-tailed tit *Aegithalos caudatus*
- song thrush *Turdus philomelos*
- wood pigeon *Columba palumbus*
- common chaffinch *Phylloscopus collybita*
- common linnet *Linaria cannabina*
- common whitethroat *Sylvia communis*
- dunnock *Prunella modularis*
- Eurasian blackcap *Sylvia atricapilla*
- European greenfinch *Chloris chloris*
- European robin *Erithacus rubecula*
- great spotted woodpecker *Dendrocopos major*
- house sparrow *Passer domesticus*
- lesser whitethroat *Sylvia curruca*

Of the species confirmed and probably breeding on site⁷, two are red-listed (common linnet and song thrush) meaning these species fit at least one of the following criteria:

- Globally threatened
- Historical population decline in UK during 1800–1995
- Severe (at least 50%) decline in UK breeding population over last 25 years, or longer-term period (the entire period used for assessments since the first BoCC review, starting in 1969)
- Severe (at least 50%) contraction of UK breeding range over last 25 years, or the longer-term period⁸

Red-listed species are thus of high conservation concern. Similarly, dunnock is Amber-listed (one level below Red-listed) and is thus of conservation concern.

Assessment

The breeding bird survey confirmed that:

- Eight bird species are confirmed to have bred on site during spring/summer 2018;
- A further eight bird species probably bred on site during spring/summer 2018;

⁷ House sparrow does not breed on the Scrubs itself but rather on the adjacent house along Braybrook Street.

⁸ https://www.rspb.org.uk/birds-and-wildlife/bird-and-wildlife-guides/bird-guide/status_explained.aspx

- At least four bird species bred successfully on site during the survey period as young were observed;
- Two Red-listed species probably bred on site during spring/summer 2018; and
- At least one Amber-listed species probably bred on site during spring/summer 2018.

Breeding birds were recorded across the entire survey area but with the highest concentrations in the scrub and thickets along Lester's Embankment. This likely to the inaccessible nature of the embankment which protects the area from disturbance by visitors – particularly dog walkers. The presence of dogs is well known to have a particularly deleterious effect on breeding birds.

This indicates Lester's Embankment is a vitally important area for a range of breeding bird species some of which are very rare in this area of London and, for species such as lesser whitethroat, common whitethroat and common linnet, is probably their closest locality to central London.

4.2 Hedgehog

No hedgehogs were found during the spot lighting surveys. Red fox *Vulpes vulpes* was noted on all surveys.

Assessment

Although no evidence of hedgehogs was discovered from the surveys, it is not possible to confirm absence. Instead a low population may exist within the site but failed to be detected by the survey methods deployed.

The habitat in the northern part of the site, which will be impacted by the HS2 development, supported the most suitable habitat for hedgehogs in terms of nest/hibernation sites and foraging opportunities. A precautionary approach should be adopted during any site clearance activities to avoid adverse impacts to hedgehogs.

5 Conclusion

The results of the renewed 2018 surveys clearly reaffirm the importance of the western portion of the Scrubs for breeding birds, particularly along Lester's Embankment where disturbance from visitors is much reduced due to the inaccessible nature of this area. Unfortunately it is along the base of Lester's Embankment where the sewer realignment works are due to take place. The realignment works will result in the digging of a significant 365m long trench with the potential for the installation of five inspection chambers. However, the exact route is liable to change and the design is not yet confirmed meaning the scale of ecological disturbance has yet to be fully realised.

5.1 Mitigation of disturbance

Any works undertaken should be completed outside of the bird breeding season (February – September inclusive) to avoid disturbance to nesting birds which may be adversely affected by the presence of large conspicuous machinery, numerous construction workers and loud noise. Such operations can cause adult birds to;

- delay nest building and breeding;
- visit the nest less frequently resulting in eggs and young perishing; or
- abandon the nest entirely.

In the first instance, works should be completed during the appropriate time window when breeding activity has settled down to almost zero (October – January inclusive). If this is not possible then measures should be taken limit disturbance as much as possible. These measures should include steps to:

- minimise clearance of vegetation by keeping to the existing path;
- minimise light and noise spill falling onto the embankment through the deployment of barriers such as hoarding;
- further minimise light spill by directly lights directly downwards, using the lowest lux level light bulbs possible with only blue or white light (red and yellow lighting results in birds' instinctual dawn wake up response to be activated); and
- return the disturbed habitat back to its original condition as best possible.

Although the presence of hedgehogs cannot be ruled out, their presence on the Scrubs seems unlikely following the implementation of surveys during 2017 and 2018 which failed to locate any evidence of the species on site.

However, a precautionary approach should be applied in case a low population of hedgehogs is present. Any vegetation clearance operations should avoid the hibernation period (November to mid-April) and the summer breeding season (June - July). Even outside of these key periods, care should be taken during vegetation clearance works. The cutting of long grass/meadow habitat and/or clearance of leaf piles/shrub vegetation should be undertaken by hand rather than by strimming or the use of machinery.

6 References

Archer, J. & Keech, D. (1993). *Nature Conservation in Hammersmith and Fulham*, Ecology Handbook 25, London Ecology Unit.

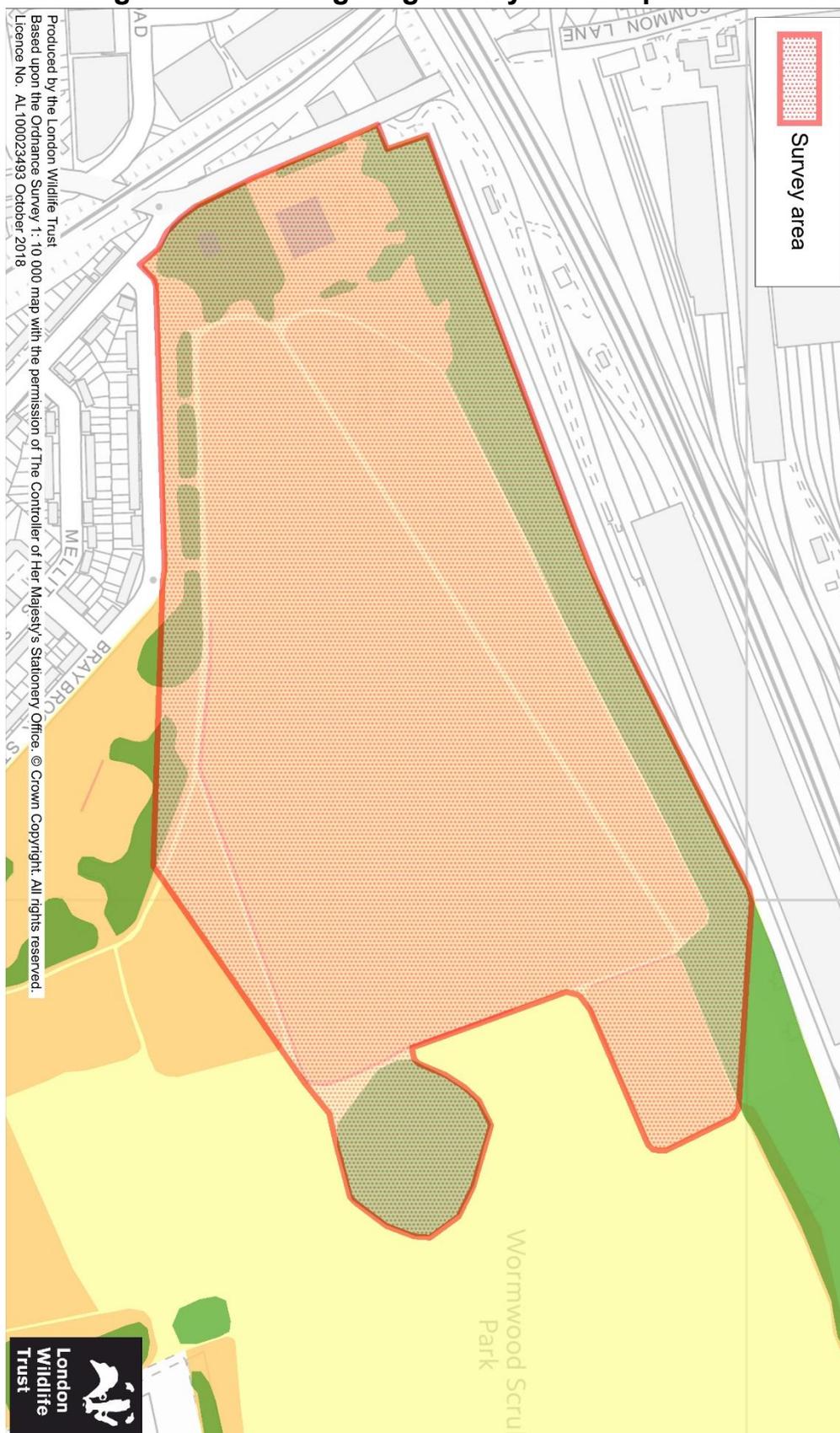
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UK Government (1994). *Biodiversity: the UK Action Plan*. CM2428, HMSO, London. 28, HMSO, London.

7 Appendices

Breeding birds and hedgehog survey area map



Breeding birds and hedgehog survey transect route map



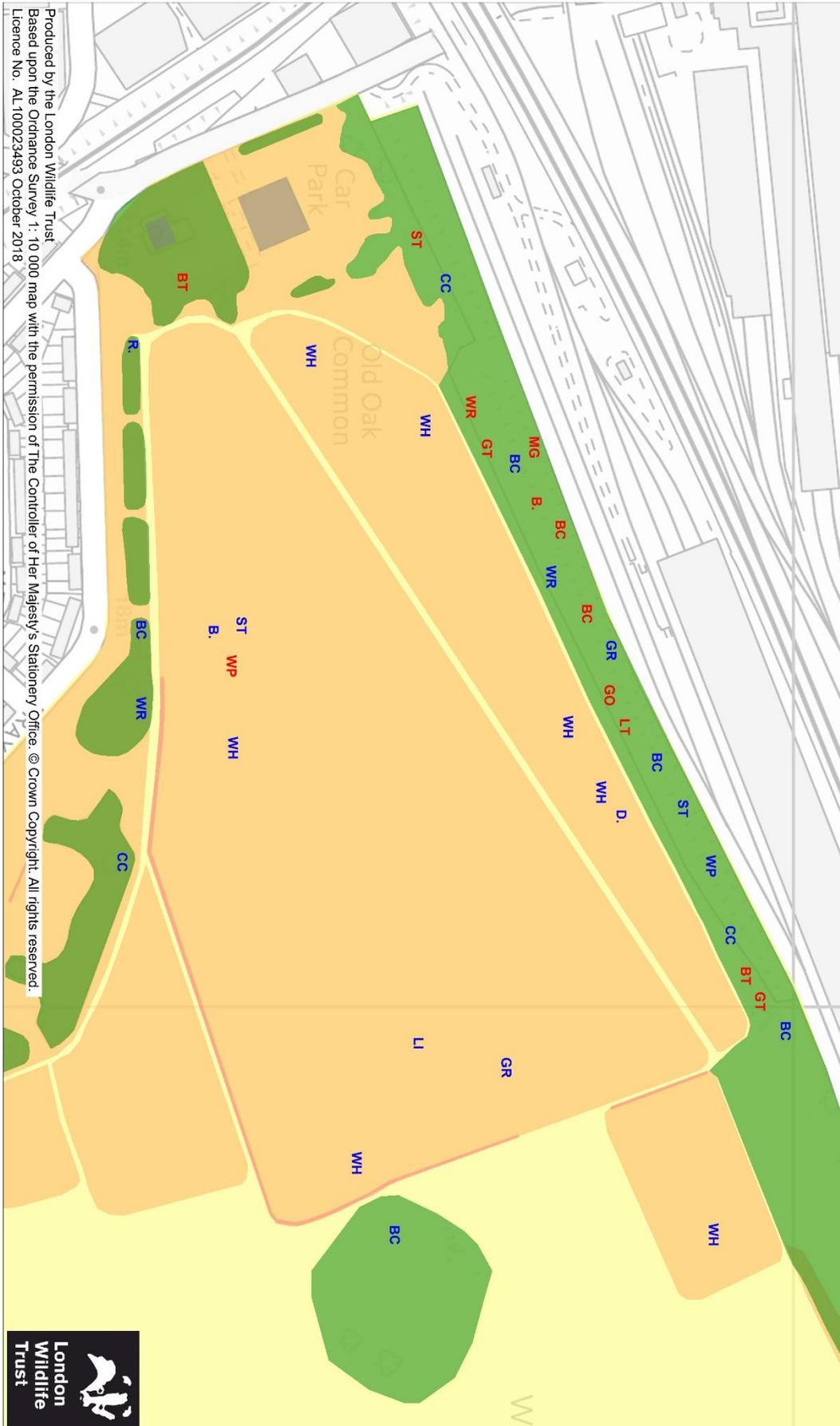
BTO bird codes

For surveying purposes the BTO uses a series of codes for each bird species to be found in the UK. They have been used on the below map to show in red where confirmed breeding has taken place and in blue where probable breeding took place.

BTO Bird codes used

- B.** blackbird
- BC** blackcap
- BT** blue tit
- CC** chiffchaff
- D.** dunnock
- GO** goldfinch
- GT** great tit
- GR** greenfinch
- GT** great tit
- LI** linnet
- LT** long-tailed tit
- MG** magpie
- R.** robin
- ST** song thrush
- WP** woodpigeon
- WT** whitethroat
- WR** wren

Confirmed and probable breeding bird locations map



8 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.

9 Staff details

Name and contact details	Role in team	Relevant experience
<p>Mike Waller BSc Grad CIEEM</p> <p>Tel: 07505 028037 Email: mwaller@wildlondon.org.uk</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.</p>
<p>Mathew Frith BSc, MCIEEM, CEnv</p> <p>Tel: 020 78034292 Email: mfrith@wildlondon.org.uk</p>	<p><i>Project advisor</i></p> <p>Quality control.</p>	<p>Nearly 30 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>