

# **TFL\_PSF\_9131 SITE INVESTIGATIONS: SMALL SITES INITIATIVE PALMERSTON CRESCENT AND BOWES ROAD**

Ecological Assessment

FEBRUARY 2020



## Palmerston Crescent and Bowes Road Ecological Assessment

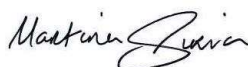
Author Rory Roche



Checker Alline Gomes



Approver Martina Girvan



Report No 10038043-ARC-05-XX-RP-YY-0020-01-Ecology Report\_Palmerston Crescent and Bowes Road

Date FEBRUARY 2020

### VERSION CONTROL

Version	Date	Author	Changes
V1.0	February 2020	Rory Roche	1 <sup>st</sup> Draft

This report dated February 2020 has been prepared for Transport for London (TfL) (the "Client") in accordance with the terms and conditions of appointment (the "Appointment") between the Client and Arcadis Consulting UK Limited ("Arcadis") for the purposes specified in the Appointment. For avoidance of doubt, no other person(s) may use or rely upon this report or its contents, and Arcadis accepts no responsibility for any such use or reliance thereon by any other third party.

# CONTENTS

- 1 INTRODUCTION ..... 1
  - 1.1 Background ..... 1
  - 1.2 Site Location & Setting ..... 1
- 2 METHODOLOGY ..... 2
  - 2.1 Desk Study ..... 2
  - 2.2 Field Survey ..... 2
  - 2.3 Limitations and Expectations ..... 2
- 3 SURVEY RESULTS ..... 4
  - 3.1 Reporting Outline ..... 4
  - 3.2 Desk Study Results ..... 4
  - 3.3 Site Overview ..... 5
  - 3.4 Habitats ..... 5
  - 3.5 Designated Sites ..... 6
  - 3.6 Protected and Notable Species ..... 6
  - 3.7 Invasive Species ..... 6
- 4 POTENTIAL ECOLOGICAL CONSTRAINTS ..... 7
  - 4.1 Habitats / Invasive Species ..... 7
  - 4.2 Protected and Notable Species ..... 7
- 5 LEGISLATION AND KEY POLICY REQUIREMENTS ..... 8
  - 5.1 Relevant Legislation ..... 8
  - 5.2 Relevant Policy ..... 8
  - 5.3 Biodiversity Net Gain ..... 8

<b>6 SUMMARY OF ECOLOGICAL CONSTRAINTS AND MITIGATION REQUIRED .....</b>	<b>10</b>
<b>7 CONCLUSIONS .....</b>	<b>12</b>
<b>SITE PHOTOGRAPHS .....</b>	<b>13</b>
<b>FIGURE 1: STATUTORY DESIGNATED SITES WITHIN 2KM/5KM OF THE SITE CENTRE .....</b>	<b>14</b>
<b>FIGURE 2: PHASE 1 HABITAT MAP (WITH TARGET NOTES).....</b>	<b>15</b>
<b>FIGURE 3: SINC'S IN THE LONDON BOROUGH OF ENFIELD .....</b>	<b>16</b>
<b>APPENDIX A: DESK STUDY REVIEW.....</b>	<b>17</b>
<b>APPENDIX B: BAT HABITAT SUITABILITY AND LONDON POPULATION STATUS.....</b>	<b>25</b>
<b>APPENDIX C: SELECTED LEGISLATION, NATURE CONSERVATION STATUS AND POLICY.....</b>	<b>28</b>

# 1 INTRODUCTION

## 1.1 Background

Arcadis (UK) Limited (Arcadis) was commissioned by Transport for London (TfL) to undertake an ecological assessment to support the feasibility for potential development at Land at Palmerston Crescent and Bowes Road, Palmers Green, London, hereafter referred to as “the Site”.

TfL is aiming to divest a number of small sites to enable prospective regeneration. The objective of the Small Sites Initiative is to provide robust and pragmatic advice that sensibly de-risks each of the sites such that unreasonable “abnormal” development costs are not included by developers.

The objective of this report is to identify potential ecological development constraints due to current ecological conditions on site as based on the findings of a desk study and ecological constraints survey. The report outlines the ecological constraints associated with the Site with regards to biodiversity legislation and policy and provides advice on mitigation and enhancement opportunities, including requirement for any further assessment or licensing, if necessary.

## 1.2 Site Location & Setting

The Site is located north of the A406 North Circular Road and south of Elmdale Road, in the London Borough of Enfield. The Site is centred at grid reference of TQ 30822 92130 and around the postcode of N13 4UX.

The Site measures approximately 0.7ha in area and is currently comprised of a frequently managed amenity grassland, scattered scrub, largely in the form of young saplings planting (likely planted within the last 24 months), along with a small number of broadleaved trees and areas of continuous dense scrub.

The area surrounding the Site is residential in nature and is characterised by terraced and semi-detached housing, whilst Pymmes Brook and Russell Road Community Park are located to the immediate west of the Site.

The closest statutory designation to the Site is Alexandra Palace and Park Local Nature Reserve (LNR), located approximately 1.8km to the south of the Site. A number of non-statutory designations are present within the area surrounding the Site, the closest of which is New River Site of Metropolitan Importance for Nature Conservation (SMINC), located approximately 150m to the west of the Site at its closest point.

The Site boundary for assessment is presented in Figure 1.

## 2 METHODOLOGY

### 2.1 Desk Study

Desk-based ecological information was collated from multiple sources.

The Multi-Agency Geographic Information for the Countryside (MAGIC) website<sup>1</sup> and other Natural England and Forestry Commission datasets were used to search for any statutory or non-statutory designated sites of nature conservation importance within a specific radius of the Site boundary, as follows:

- Special Protection Areas (SPAs) or Ramsar Sites designated for their bird interests (5km radius);
- Special Areas of Conservation (SACs) (5km radius);
- Sites of Special Scientific Interest (SSSIs) and all other statutory designated sites (2km radius);
- National Nature Reserves (NNR) (2km radius);
- Local Nature Reserves (LNR) (2km radius); and
- Woodlands registered on the Ancient Woodland Inventory (AWI) (2km radius).

Records of protected or otherwise notable species of conservation concern (that the Site has the potential to support) located 1km of the Site boundary were obtained from the following sources:

- Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006) Species of Principle Importance in England<sup>2</sup>;
- National Biodiversity Network Atlas<sup>3</sup>; and
- London Biodiversity Action Plan<sup>4</sup>.

In addition, the Local Plan was reviewed for citations of any non-statutory designated sites located within a 1km radius of the Site, including Local Wildlife Sites (LWS) and the locations of Sites of Importance for Nature Conservation (SINCs) were also obtained from London Borough of Lambeth. No citations for these sites were obtained other than where information was publicly accessible.

SINCs fall into three sub designations:

- Sites of Metropolitan Importance for Nature Conservation (SMINCs);
- Sites of Borough Importance for Nature Conservation (SBINCs) Grades I and II; and
- Sites of Local Importance for Nature Conservation (SLINCs).

Waterbodies located within 250m of the Site identified from OS mapping were assessed with regards to their connectivity to the Site and their potential suitability for supporting a population of breeding great crested newts (*Triturus cristatus*).

### 2.2 Field Survey

This survey was conducted by Rory Roche (Consultant Ecologist) on 5<sup>th</sup> February 2020. Habitats were classified according to their JNCC Phase 1 habitat categories (JNCC 2010)<sup>5</sup> and plants named after Stace (1997)<sup>6</sup> and are presented on Figure 1.

### 2.3 Limitations and Expectations

This report has been prepared for TfL in accordance with the terms and conditions of appointment. Arcadis cannot accept any responsibility for any use of or reliance on the contents of this report by any third party. The copyright of this document, including the electronic format shall remain the property of Arcadis.

<sup>1</sup> MAGIC (2002). MAGIC Map Search. [online] Available at <http://magic.defra.gov.uk> [Accessed February 2020]

<sup>2</sup> NERC Act (2006) Section 41 Species <http://www.nhm.ac.uk/our-science/data/uk-species/checklists/NHMSYS0020515439/index.html>

<sup>3</sup> National Biodiversity Network <https://nbn.org.uk/> [Accessed February 2020]

<sup>4</sup> London BAP (Reviewed 2007) <http://www.gigl.org.uk/london-bap-priority-species/> [Accessed February 2020]

<sup>5</sup> Joint Nature Conservation Committee (2010), *Handbook for Phase 1 habitat survey - a technique for environmental audit*

<sup>6</sup> Stace, C. (1997). *New Flora of the British Isles Second Edition*. Cambridge University Press

This report has been compiled from a number of sources, which Arcadis believes to be trustworthy. However, Arcadis is unable to guarantee the accuracy of information provided by others. The report is based on information available at the time. Consequently, there is a potential for further information to become available, which may change this report's conclusion and for which Arcadis cannot be responsible.

No access issues were encountered during the survey.

## 3 SURVEY RESULTS

### 3.1 Reporting Outline

The results of the desk study and ecological constraints survey are described below, with Sites or features of particular nature conservation interest detailed as appropriate.

Supporting information to be read in conjunction with the results and subsequent discussion are as follows:

- Figure 1: Statutory Designated Sites within 2km/5km of the Site;
- Figure 2: Phase 1 Habitat Map (with target notes);
- Figure 3: SINCS in the London Borough of Enfield;
- Table 1: Ecological Constraints and Mitigation Summary Table; and
- Table 2: Site photographs (at the end of the report).

Only information potentially relevant to the development of the Sites is included within the report other information is appended as follows:

- Appendix A: Desk Study Results;
- Appendix B: Bat Habitat Suitability Assessment and London Bat Population Status; and
- Appendix C: Selected Legislation, Nature Conservation Status and Policy.

### 3.2 Desk Study Results

Only desk study results that are potentially relevant to the Site are presented within the report. Detailed status and protections conferred by the relevant designations below are presented in Appendix A. The relevant Site information is summarised below.

- No Statutory designated sites (including ancient woodlands or woodlands listed on the Ancient Woodland Inventory (AWI)) identified within the vicinity of the Site have the potential to be significantly impacted by development on the Site (See Appendix A).
- The closest statutory designation to the Site is Alexandra Palace and Park Local Nature Reserve (LNR), located approximately 1.8km to the south of the Site. This LNR has been designated due to the presence of large areas of Grade II listed parkland, whilst it also supports a wide range of flora and fauna, with more than 100 bird species recorded to utilise the site, including regular visits from Peregrine Falcon;
- The closest non-statutory designation to the Site is the New River Site of Metropolitan Importance for Nature Conservation (SMINC), located approximately 150m to the west of the Site at its closest point. This SMINC comprises areas of scrub, semi-improved neutral grassland and running water habitats, which offer a variety of opportunities to invertebrates and birds, of which both species groups are found in diverse assemblages within the SMINC. Moreover, this river habitat forms part of London's cleanest waterway;
- There were records of Spanish Bluebell (*Hyacinthoides hispanica*), Cherry Laurel (*Prunus avium*) and False-acacia (*Robinia pseudoacacia*), species listed on London Invasive Species Initiative (LISI)<sup>7</sup> within 1km of the Site;
- There were records of the following bird species within 1km of the Site: house sparrow (*Passer domesticus*), which is a London BAP and Priority Species S41, along with a number of other species, including wood pigeon (*Columba palumbus*) and blackbird (*Turdus merula*);
- There were records of hedgehog (*Erinaceus europaeus*) within 500m of the Site which is a London BAP and Priority Species S41;

---

<sup>7</sup> London Invasive Species Plan (2012). Legislative and Information Exchange Framework. [online] Available at <http://www.londonisi.org.uk/tackling-inns/lisp/>. [accessed January 2020]



- There were records of fox (*Vulpes vulpes*) and grey squirrel (*Sciurus carolinensis*) within 1km of the Site which although not protected for conservation value are protected from inhumane killing or injury by the Wild Mammal Act (1996)<sup>8</sup>; and
- There were no relevant records of reptiles or of badger.

### 3.3 Site Overview

The Site is located north of the A406 North Circular Road and south of Elmdale Road, in the London Borough of Enfield. The Site is centred at grid reference of TQ 30822 92130 and around the postcode of N13 4UX.

The Site measures approximately 0.7ha in area and is currently comprised of a managed amenity grassland, along with scattered scrub, largely in the form of young whip planting, along with a small number of broadleaved trees and areas of continuous dense scrub.

The area surrounding the Site is residential in nature and is characterised by terraced and semi-detached housing, whilst Pymmes Brook and Russell Road Community Park are located to the immediate west of the site.

The closest statutory designation to the Site is Alexandra Palace and Park Local Nature Reserve (LNR), located approximately 1.8km to the south of the Site. A number of non-statutory designations are present within the area surrounding the Site, the closest of which is New River Site of Metropolitan Importance for Nature Conservation (SMINC), located approximately 150m to the west of the Site at its closest point.

Evidence of Butterfly-bush (*Buddleja davidii*) and Green Alkanet (*Pentaglottis sempervirens*) (Target Note 1 and 3 in Figure 2), which are both listed on the London Invasive Species Index (LISI) were recorded within the Site. Encroachment into the Site from adjacent residential property with area used for storage (Target Note 2 in Figure 2) was observed.

### 3.4 Habitats

Phase 1 habitat categories and descriptions of these habitats are presented below and the locations of these habitats are presented in Figure 1. Photographs are presented in the Site Photographs section.

- **Hardstanding:** The hardstanding is in the form of pavement footpaths, present within the south of the Site. It was in good condition with only small areas (cracks between paving stones) colonised by ephemeral species, such as Groundsel (*Senecio vulgaris*) and Common Chickweed (*Stellaria media*).
- **Dense continuous scrub:** Present along the northern boundary of the Site, abutting the closed board fencing that bounds the adjacent residential properties. Comprised of Blackthorn (*Prunus spinosa*), Hawthorn (*Crataegus monogyna*), Sycamore (*Acer pseudoplatanus*), Hazel (*Corylus avellane*), Field Maple (*Acer campestre*), Butterfly-bush (*Buddleja davidii*) (LISI, as highlighted at Target Note 1 in Figure 2) and Bramble (*Rubus fruticosus* agg.).
- **Scattered scrub:** A number of individual stands, largely in the form of young saplings planting but also as self-seeded scrub. The species recorded within the Site include Silver Birch (*Betula pendula*), Loquat (*Eriobotrya japonica*), Sycamore, Guelder-rose (*Viburnum opulus*), Walnut (*Juglans regia*) and Olive (*Olea europaea*).
- **Scattered broadleaved trees:** Within and adjacent to the Site, ranging from early-mature to mature in age and comprising Apple (*Malus* sp.), Small-leaved Lime (*Tilia cordata*), Common ash (*Fraxinus excelsior*), Sycamore, Purple leaved plum (*Prunus Cerasifera*). See the Arboricultural Report for full results.
- **Amenity grassland:** Covered the majority of the Site, supported a sward of approximately 5-10cm in height (at the time of survey) along with small areas of up to 20cm sward. Species included Perennial Rye-grass (*Lolium perenne*), Yorkshire-fog (*Holcus lanatus*), White Clover (*Trifolium repens*), Common Chickweed, Dandelion (*Taraxacum officinale* agg.), Dove's-foot Crane's-bill

<sup>8</sup> Anon The Wild Mammal Act (1996). HMSO

(*Geranium mole*), Common Nettle (*Urtica dioica*), Common Mallow (*Malva Sylvestris*), Cleavers (*Galium aparine*), Ribwort Plantain (*Plantago lanceolata*), Yarrow (*Achillea millefolium*), Ivy (*Hedera helix*), Daisy (*Bellis perennis*), Creeping Thistle (*Cirsium arvense*), Common Field-speedwell (*Veronica persica*), Dog's Mercury (*Mercurialis perennis*) and Green Alkanet (LISI, as highlighted at Target Note 3 on Figure 2).

### 3.5 Designated Sites

The closest statutory designation to the Site is Alexandra Palace and Park Local Nature Reserve (LNR), located approximately 1.8km to the south of the Site. Due to the location of this LNR in close proximity to the Site, increased recreational pressures as a result of the development of the Site were considered however, due to the size of the Site and the limited number of units that the developable area could accommodate, additional recreational pressures are considered to be negligible.

A number of non-statutory designations are present within the area surrounding the Site, the closest of which is New River Site of Metropolitan Importance for Nature Conservation (SMINC), located approximately 150m to the west of the Site at its closest point. Given the proximity of the Site to this designation, recreational pressures on the SMINC were considered, however, as set above about with respect to Alexandra Palace and Park LNR, due to the size of the Site and the limited number of units that the developable area could accommodate, additional recreational pressures are considered to be negligible.

### 3.6 Protected and Notable Species

The following protected or notable species have the potential to be present on the Site:

- **Nesting Birds:** There is potential for nesting birds to be utilising the trees, scattered scrub and dense continuous scrub within the Site, including species listed on the London BAP and Priority Species S41 species such as house sparrow.
- **Other Mammals:** The Site has the potential to be used by mammals, likely in the form of hedgehog (London BAP and Priority Species S41), commuting/foraging route. Whilst suitable habitat for badger sett building is present within the Site (in the form of the sloped embankment within the north of the Site), no evidence of this species was recorded within the Site.

The Site offered no suitable habitat for reptiles and no ponds were present within 500m of the Site with connectivity to the Site, so the presence of great crested newts is extremely unlikely. Overall, within the Site, there was limited potential for protected or notable species.

### 3.7 Invasive Species

Evidence of Butterfly-bush (Target Note 1 in Figure 2) and Green Alkanet (Target Note 3 in Figure 2), which are both listed on the London Invasive Species Index (LISI), were recorded within the Site.

## 4 POTENTIAL ECOLOGICAL CONSTRAINTS

The potential ecological constraints and associated further works including mitigation is briefly presented below, further detail is presented in Table 1.

### 4.1 Habitats / Invasive Species

No habitats recorded within Site support any form of significant green infrastructure, no protected or notable flora species were recorded within the Site. The habitats within the Site offer very limited opportunities to protected or notable faunal species. However, these habitats have value in terms of green infrastructure, likely performing important ecosystem services (such as water quality and volume attenuation and air quality attenuation etc.).

There will also be some ecological benefit from the removal of non-native and invasive species listed on LISI, in this case Butterfly-bush and Green Alkanet. There is no legal obligation to control the LISI species recorded on the Site or to remove it as controlled waste, but it is good practice to remove them and to avoid their spread.

An ecologist and arboriculturist should contribute to the evolution of any development and landscaping design for the Site to minimise biodiversity loss and to advise upon the provision of appropriate green infrastructure.

### 4.2 Protected and Notable Species

The following notable or protected species have the potential to be impacted by the works:

- **Nesting birds:** It is likely that nesting birds may utilise the Site and, as such, clearance of vegetation should be avoided during the nesting bird season (March to August inclusive) or be undertaken following a pre-clearance nest check by an ecological watching brief. Replacement nesting opportunities should be provided within any development; and
- **Other mammals:** The Site has some very limited potential to be used by mammals, likely in the form of a hedgehog (London BAP and Priority Species S41) commuting/foraging route. This species is protected against inhumane killing or injury under the Wild Mammal (Protection) Act 1996. Should the Site be cleared during the hedgehog hibernation season (November to March inclusive, seasonally dependant) supervision by an ecological watching brief during clearance is recommended to prevent killing or injuring hibernating hedgehog. The implementation of permeable fencing to benefit small mammals such as hedgehog which is a priority species currently in decline is a design recommendation. The implementation of such a staged clearance approach will also effectively safeguard any other mammals that may be present within the Site at the time of the clearance works. Badger is a mobile species and setts can be constructed at any time, although no badger sett or signs were observed during the visit, suitable setting habitat is present, therefore a walkover by an ecological watching brief prior ground-breaking works commence is recommended.

## 5 LEGISLATION AND KEY POLICY REQUIREMENTS

Potentially relevant Legislation and Policy are presented in Appendix C and further detail with regards to surveys and mitigation required are presented in Table 1.

### 5.1 Relevant Legislation

Development of the Site will require surveys and or mitigation to fulfil legislative requirements for the following protected species:

- WCA, as amended 1981, for nesting birds: works will need to be timed to avoid the nesting bird season (March to August inclusive) or supervised to prevent impacts to nesting birds; and
- The Mammal Act (1996), for hedgehog: works will need to ensure that there are no inhumane killing or injury of this species if present during the scrub removal.

Full details of subsequent works required are included within section 6, Table 1 below.

### 5.2 Relevant Policy

Elements of national and London policies and plans have the potential to be applicable to any development of the Site, these relate to:

- The safeguarding and replacement of trees to be lost to development;
- Creation and enhancement of biodiversity where possible;
- Removal of LSI species would be advantageous; and
- Material consideration of S41 species in design and planning such as, house sparrow and hedgehog.

An ecology report addressing the required design and construction mitigation for any proposed development will be required in support of planning.

### 5.3 Biodiversity Net Gain

In line with the 25 Year Plan for the Environment<sup>9</sup> and the National Planning Policy Framework<sup>10</sup>, new development is required to identify and pursue opportunities for securing measurable net gains for biodiversity and for the wider environment. The Environment Bill 2020<sup>11</sup> which was first introduced on 15 October 2019, it was re-introduced to parliament following a general election on 30 January 2020. The Environment Bill will help deliver the government's manifesto commitment to delivering the most ambitious environmental programme of any country. The Environment Bill introduces a mandatory requirement for biodiversity net gain for new development to ensure that new developments enhance biodiversity and create new green spaces for local communities to enjoy. Integrating biodiversity net gain into the planning system will provide a step change in how planning and development is delivered. This is likely to be set at 10%. There is also a strong focus on delivering environmental net gain. This would preferably be achieved onsite, however there are options to deliver these gains offsite and this would be demonstrated via the Biodiversity Metric 2.0 which was issued on 29 July 2019<sup>12</sup>.

Many local planning authorities are also strengthening their policies around biodiversity and green infrastructure in response to the biodiversity and climate emergency. As part of the London Plan – Intend to Publish December 2019<sup>13</sup>. Policy G5, Urban Greening, requires new developments to incorporate green infrastructure including trees, green roofs, green walls and nature-based sustainable drainage. The Mayor has developed an Urban Greening Factor model to assist boroughs and developers in determining the appropriate provision of green infrastructure. This can provide a range of benefits in addition to biodiversity such as urban heat island effect reduction, water quality and quantity attenuation, air quality improvements, and amenity which confers health and wellbeing. The latter being

<sup>9</sup> HM Government (2018) 'A Green Future: Our 25 Year Plan to Improve the Environment', HM Government, London.

<sup>10</sup> MHCLG (2019) National Planning Policy Framework

<sup>11</sup> <https://www.gov.uk/government/publications/environment-bill-2020>

<sup>12</sup> Defra Biodiversity Metric 2.0 — (2019) <http://publications.naturalengland.org.uk/publication/5850908674228224>

<sup>13</sup> Greater London Authority (2019) London Plan – Intend to Publish. Available at: [https://www.london.gov.uk/sites/default/files/intend\\_to\\_publish\\_-\\_clean.pdf](https://www.london.gov.uk/sites/default/files/intend_to_publish_-_clean.pdf)

particularly important in the most densely developed parts of the city where traditional green space is limited.

The area has biodiversity and ecosystem service value including, noise and air quality attenuation, water volume and quality attenuation, and carbon sequestration. Maximising the biodiversity and ecosystem service potential of the landscape to remain or be included within the soft estate of any development is recommended.

Building integrated vegetation would also be recommended such as the consideration of a biodiversity roof, incorporation of integral bird and bat boxes, micro SuDS, the implementation of permeable fencing to benefit small mammals such as hedgehog which is a priority species currently in decline, sensitive lighting strategy, tree replacement and new tree planting where feasible. Off-Site compensation should also be considered if required with the objective to achieve net gain.

6 SUMMARY OF ECOLOGICAL CONSTRAINTS AND MITIGATION REQUIRED

Table 1 Ecological Constraints and Mitigation Summary Table

Key Issues	Legislation/Policy	Assumption	Further Survey / input?	Seasonal Timing	Mitigation Required	Seasonal Timing	Programme Delay Risk	Survey/ Mitigation Cost Estimate*	Risk Rating
Biodiversity General									
Ecology Report in Support of Planning	WCA, 1981, as amended London BAP and Priority Species S41 NPPF 2019	To inform and mitigate any potential design	See below	See below	See below	See below	Early commissioning of Ecologist recommended to input into design	Report for planning £2000- 3000	Low
Green Infrastructure									
Green Infrastructure and Biodiversity Net Gain	National and local policy around no net loss and net gain. NPPF 2019 London Plan – Intend to Publish 2019 Environmental Bill 2020	NPPF required environmental and biodiversity net gain and the draft Environment Bill with require new developments to demonstrate 10% bng for new developments	Design input and Biodiversity Metric 2.0 desktop calculations	N/A	N/A	N/A	None	Design input and net gain calculation £1000 – 1500 Design and replacement of green infrastructure not costed.	Low
Nesting Birds									
The green infrastructure present within and immediately adjacent to the Site, such as the trees, scattered scrub and dense scrub, are suitable for nesting birds. These are likely to be removed for development.	WCA, 1981, as amended	Removed for development / Site investigation.	No (but see mitigation recommendations)	N/A	Remove vegetation outside the core nesting bird season (March to August inclusive) or vegetation removal will need to be supervised by an ecological watching brief	September to February	If vegetation removal is required during the nesting bird season and nest are found by the ecological watching brief, a delay of 6 weeks is likely to be required until chicks have fledged.	Mitigation £500 - £1000 per day for ecological supervision / nesting bird check. Design and replacement of green infrastructure not costed	Low
Trees									
Trees were present within and at the boundaries of the Site and may be impacted by development. Although none of the trees on the Site are covered by	No Tree Preservation Orders are present on Site.	The trees are likely to be removed or damaged due to development	Yes: BS 3857 2012 Tree survey	Removal of trees affected by bird nesting season (see above)	An Arboricultural Impact Assessment will be required for any design to ensure that there is protection of trees to be retained and adjacent trees and replacement of trees and green infrastructure implemented via an Arboricultural Method Statement and Landscape Strategy.	N/A	None	Survey: Completed Mitigation: Arboricultural Impact Assessment £1500-2500 Bespoke Arboricultural Method Statement £1,500	Low

Ecological Assessment

Key Issues	Legislation/Policy	Assumption	Further Survey / input?	Seasonal Timing	Mitigation Required	Seasonal Timing	Programme Delay Risk	Survey/ Mitigation Cost Estimate*	Risk Rating
Tree Preservation Orders TPO, they are providing amenity value and partial screening to the adjacent residential properties to the north of the Site.								£500- 1000 per day for Site supervision Design and replacement of green infrastructure not costed.	
Other Mammals									
The areas of dense scrub are suitable for hedgehog and badger. These are likely to be removed for development. Despite no signs recorded, suitable badger setting habitat north of the Site.	London BAP and Priority Species S41 Mammal Act (1996)	Removed for development / Site investigation	No (but see mitigation recommendations)	N/A	Should scrub be removed in the hibernation season (November to March inclusive) vegetation removal will need to be supervised by an ecological watching brief. Badger is a mobile species and setts can be constructed at any time, although no badger sett or signs were observed during the visit, suitable setting habitat is present, therefore a walkover by an ecological watching brief prior ground breaking works commence is recommended.	April to October inclusive for hedgehog Anytime for badger	None	N/A OR can be combined with other activities on Site	Low
Non-native Invasive species									
Butterfly-bush and Green Alkanet	London Invasive Species Index (LISI)	Development could cause these species to spread	No	N/A	It would be good practice to remove the Butterfly-Bush and Green Alkanet	N/A	N/A	N/A Can be undertaken with vegetation clearance for development.	Low

**\* Cost estimates only, actual costs would depend on the procurement, design and programme of any subsequent development and do not include costs any actual green infrastructure replacement or associated protected species licencing**



## 7 CONCLUSIONS

There are no likely significant ecological constraints with regards to the development of this Site.

No statutory or non-statutory designated sites (including ancient woodlands or woodlands listed on the AWI) identified within the vicinity of the Site have the potential to be significantly impacted by development on the Site.

The closest statutory designation to the Site is Alexandra Palace and Park Local Nature Reserve (LNR), located approximately 1.8km to the south of the Site. Due to the location of this LNR in close proximity to the Site, increased recreational pressures as a result of the development of the Site were considered however, due to the size of the Site and the limited number of units that the developable area could accommodate, additional recreational pressures are considered to be negligible.

A number of non-statutory designations are present within the area surrounding the Site, the closest of which is New River Site of Metropolitan Importance for Nature Conservation (SMINC), located approximately 150m to the west of the Site at its closest point. Given the proximity of the Site to this designation, recreational pressures on the SMINC were considered, however, as set above about with respect to Alexandra Palace and Park LNR, due to the size of the Site and the limited number of units that the developable area could accommodate, additional recreational pressures are considered to be negligible.

Potential constraints are listed below:

- The Site was dominated by frequently managed amenity grassland and hardstanding, along with scattered broadleaved trees, scattered scrub and areas of dense continuous scrub. The habitats on Site were generally un-diverse due to species selection and management for ornamental purposes. However, these habitats have value in terms of green infrastructure, likely performing important ecosystem services (such as water quality and volume attenuation and air quality attenuation etc.).
- There is potential for nesting birds to be utilising the trees, scattered scrub and areas of dense scrub habitats on Site, including species listed on London BAP and Priority Species S41 such as house sparrow. Removal of suitable vegetation on the Site will need to be conducted outside of the bird nesting season (March – August inclusive) or under an ecological watching brief.
- There is potential for hedgehogs which is a London BAP and Priority Species S41 (also protected from inhumane killing or injury) to use the Site. Should vegetation clearance be required during the hibernation season (November to March), this should be undertaken by an ecological watching brief. Badger is a mobile species and setts can be constructed at any time, although no badger sett or signs were observed during the visit, suitable setting habitat is present, therefore a walkover by an ecological watching brief prior ground-breaking works commence is recommended.
- There will be some ecological benefit from the removal of non-native and invasive species on LISI, which is likely to occur when the Site is cleared for any construction. There is no legal obligation to control any of the LISI species (Butterfly-bush and Green Alkanet) recorded within the Site or to remove them as controlled waste but it is good practice to remove them and to avoid their spread.
- Trees and other vegetation should be included within any proposed soft landscaping and these designs should be evolved in liaison with an ecologist and arboriculturist. In addition, rain gardens, biodiversity roofs and other green infrastructure should be considered within any development.
- Biodiversity net gain is due to become mandatory for new development. There are opportunities for the incorporation of integral bird and bat boxes, micro SuDS, the implementation of permeable fencing to benefit small mammals such as hedgehog which is a priority species currently in decline, sensitive lighting strategy, tree replacement and new tree planting where feasible.



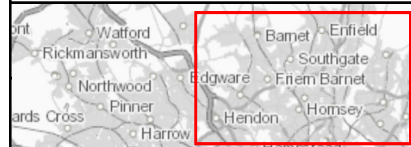
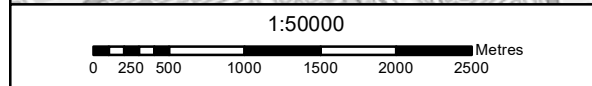
## SITE PHOTOGRAPHS

Table 2: Palmerston Crescent and Bowes Road Site Photographs

Palmerston Crescent and Bowes Road Site Photographs	
	
Photograph 1: Overview of the Site.	Photograph 2: Instance of Butterfly-bush within the Site (Target Note 1).
	
Photograph 3: Example of Green Alkanet within the Site (Target Note 3).	Photograph 4: Large semi-mature Small-leaved Lime.
	
Photograph 5: Dense scrub present along the northern Site boundary.	Photograph 6: Encroachment into the Site from adjacent residential property. Area used for storage (Target Note 2).

**FIGURE 1: STATUTORY DESIGNATED SITES WITHIN 2KM/5KM OF THE SITE CENTRE**





THIS MAP IS BASED UPON THE ORDNANCE SURVEY MATERIAL WITH THE PERMISSION OF ORDNANCE SURVEY ON BEHALF OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE.  
© Crown copyright 2019.

REV	Date	Description	Drawn	Check	Approv
01	07/02/20	Initial Issue	SP	AB	MG

- LEGEND**
- Site Centre Point
  - 2km Buffer
  - 5km Buffer
  - Local Nature Reserves (within 2km)

Client



**Site**  
Land at Palmerston Crescent  
and Bowes Road, London

Transport for London  
Small Sites Initiative

Client

55 Broadway  
Corporate Finance, 6th Floor  
London, SW1H 0BD  
United Kingdom  
Phone: 44-343-7222-5600  
Fax: 44-300-112-3456  
Web url: www.tfl.gov.uk

Suitability Description:

PRELIMINARY/CONFIDENTIAL

Designed	R. Roche	Date	07FEB20	Signed	
Drawn	S. Pradeepa	Date	07FEB20	Signed	
Checked	A. Brodzinski	Date	07FEB20	Signed	
Approved	M. Girvan	Date	07FEB20	Signed	
Scale:	1:50000	Datum:	AOD		
Original Size:	A3	Grid:	OS		
Suitability Code:	S2	Project Number:	10038043		

PROJECT:

TRANSPORT FOR LONDON  
SMALL SITES INITIATIVE

TITLE:

Land at Palmerston Crescent  
and Bowes Road International  
and National Designated Sites



Registered office:  
Arcadis House  
34 York Way  
London  
N1 9AB  
www.arcadis.com

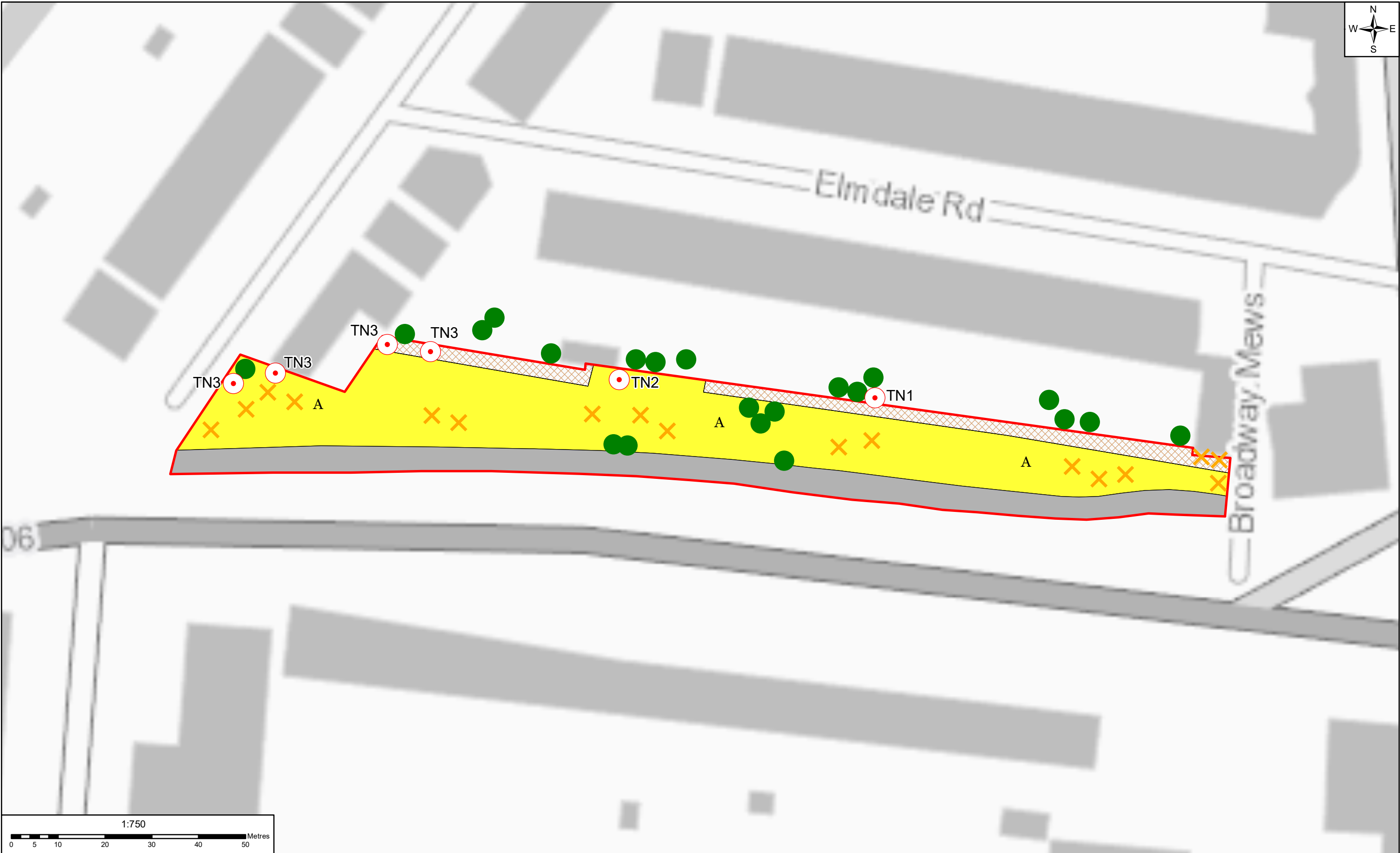
Design & Consultancy  
for natural and  
built assets

Coordinating office:  
9th Floor 401 Paradise Street  
Birmingham B2 4PA  
Warrington WA3 6GA  
Tel: 44 (0)1925 708000

Drawing Number: 10038043-ARC-05-XX-DR-YY-0047-01 Issue 01



**FIGURE 2: PHASE 1 HABITAT MAP (WITH TARGET NOTES)**



1:750

0

5

10

20

30

40

50

Metres

THIS MAP IS BASED UPON THE ORDNANCE SURVEY MATERIAL WITH THE PERMISSION OF ORDNANCE SURVEY ON BEHALF OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE.  
© Crown copyright 2019.

REV	Date	Description	Drawn	Check	Approv
01	07/02/20	Initial Issue	SP	AB	MG

●

Target Note (TN)

●

Scattered Broad-leaved Tree

×

Scattered Scrub

Site Boundary

Dense Scrub

Hardstanding

A

Amenity Grassland

TN1 - Butterfly-bush (London Invasive Species)  
TN2 - Area of encroachment from adjacent residential property. In used as storage area.  
TN3 - Green Alkanet (London Invasive Species)

Client

Site

Land at Palmerston Crescent and Bowes Road, London

Transport for London  
Small Sites Initiative

Client

55 Broadway  
Corporate Finance, 6th Floor  
London, SW1H 0BD  
United Kingdom

Phone: 44-343-7222-5600  
Fax: 44-300-112-3456  
Web url: www.tfl.gov.uk

Suitability Description:			
PRELIMINARY/CONFIDENTIAL			
Designed	R. Roche	Date 07FEB20	Signed
Drawn	S. Pradeepa	Date 07FEB20	Signed
Checked	A. Brodzinski	Date 07FEB20	Signed
Approved	M. Girvan	Date 07FEB20	Signed
Scale:	1:750	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	S2	Project Number:	10038043

PROJECT:

TRANSPORT FOR LONDON  
SMALL SITES INITIATIVE

TITLE:

Land at Palmerston Crescent  
and Bowes Road - Phase 1 Map

Design & Consultancy  
for natural and  
built assets

Registered office:  
Arcadis House  
34 York Way  
London  
N1 9AB  
www.arcadis.com

Coordinating office:  
5th Floor 401 Parades Street  
Birchwood Park  
Warrington WA3 6GA  
Tel: 44 (0)1925 700600

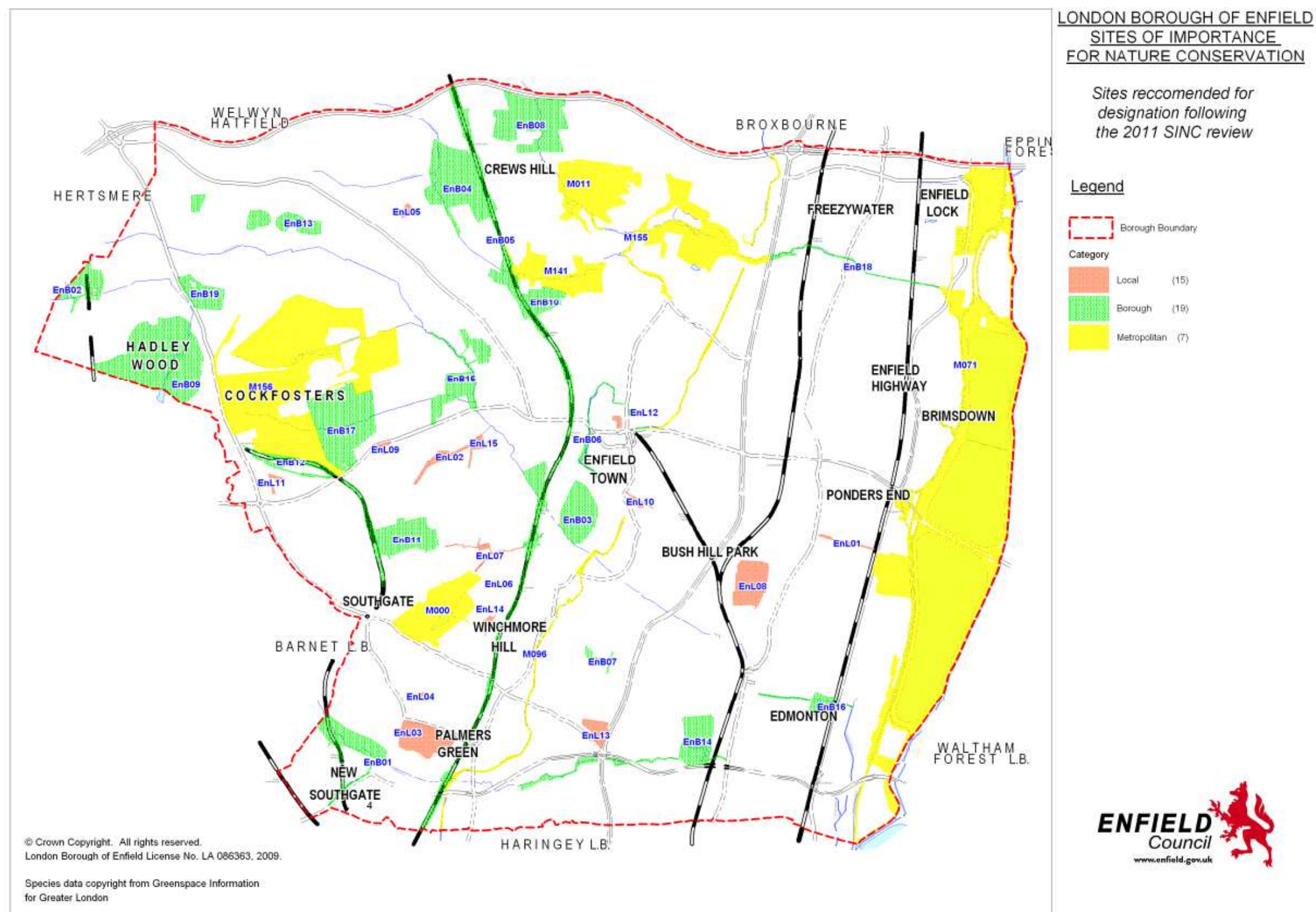
Drawing Number:

10038043-ARC-05-XX-DR-YY-0048-01

Issue

01

**FIGURE 3: SINC'S IN THE LONDON BOROUGH OF ENFIELD**



## Appendix A: Desk Study Review

### Statutory Designated Sites

The desk study found no Natura 2000 sites (SPAs, SACs, Ramsar) within 5km of the site.

The desk study found the following statutory designated sites within 2km of the Site (Figure 1):

- Alexandra Palace and Park Local Nature Reserve (LNR).

It was assessed that there was negligible potential for significant impacts to this site from any development on the Site.

### Non-Statutory Designated Sites

The desk study found the following non-statutory designated sites within 1km of the Site (Figure 3):

- New River Site of Metropolitan Importance for Nature Conservation (SMINC);
- Broomfield Park Site of Local Importance for Nature Conservation (SLINC);
- Arnos Park Site of Borough Importance for Nature Conservation (SBINC); and
- New River Sports Centre, White Hart Lane Recreation Ground & Woodside Park SLINC.

It was assessed that there was negligible potential for significant impacts to these Sites from any development on the Site.

### Woodlands registered on the Ancient Woodland Inventory (AWI)

The desk study found no woodland registered on the Ancient Woodland Inventory is present within 2km of the Site.

## Statutory Designated Sites

Table A:1: Statutory Designated Sites

Site Name	Designation	Size (ha)	Distance (km)	Direction	Description
Local Nature Reserve (LNR)					
Alexandra Palace and Park	LNR	62.66	1.8	S	<p>Alexandra Park's 196 acres of Grade II listed parkland surrounds one of London's most iconic destinations – Alexandra Palace. The Park is a much-loved green space and its beautifully maintained grounds and stunning views over London are enjoyed all year round.</p> <p>The Park and Palace host a diverse range of events throughout the year. Outdoor events included a Park-wide summer festival, the popular Red Bull Soapbox race and the huge annual fireworks festival. While more modern attractions have been developed across the Park, a number of historic features are still in existence including the boating lake and rose garden.</p> <p>Alexandra Park has been declared a Local Nature Reserve recognising the site's importance for wildlife as well as people. It is home to a wide range of flora and fauna and is a haven for bird watching with more than 100 species recorded including regular visits from a Peregrine Falcon.</p>

## Non-Statutory Designated Sites

Table A:2: Non-Statutory Designated Sites

Site Name	Designation	Size (ha)	Distance (km)	Direction	Description
Site of Importance for Nature Conservation (SINC)					
New River	SMINC	19.4	0.15	W	<p>Probably London's cleanest waterway; the New River was originally constructed in the early 17<sup>th</sup> century to supply the capital with drinking water from chalk springs in Hertfordshire. The river supports a diverse aquatic and marginal flora, including the London rarities lesser water-parsnip (<i>Berula erecta</i>), unbranched bur-reed</p>



## Ecological Assessment

Site Name	Designation	Size (ha)	Distance (km)	Direction	Description
					<p>(<i>Sparganium emersum</i>), stream water-crowfoot (<i>Ranunculus penicillatus</i>) and the nationally declining river water-dropwort (<i>Oenanthe fluviatilis</i>).</p> <p>Kingfishers are seen regularly and may breed. The aquatic invertebrate fauna is also likely to also be diverse, as indicated by the range of dragon/damselflies present, which include red-eyed damselfly, which is scarce in London, and very large populations of common blue damselfly. The river supports a good range of fish, including pike, perch, roach and carp, and may be of value for amphibians. The section beside Stoke Newington West Reservoir (west of Lordship Lane) is owned by Hackney Council, while the rest of the New River is owned by Thames Water. There is public access via a footpath along much of its length except between Finsbury Park and Bowes Park, and between Ridge Avenue at Winchmore Hill and Carterhatch Lane to the north of Enfield. Some parts of the original course, such as the New River Walk in Islington and the Enfield Loop, no longer have fresh water flowing along them and these do not form part of this site.</p>
Broomfield Park	SLINC	21.4	0.4	NW	<p>Formerly the grounds of Broomfield House with several features of wildlife interest, including a series of connected lakes, small pockets of planted birch (<i>Betula pendula</i>), woodland and large parkland oak (<i>Quercus robur</i>) trees. The lakes contain rigid hornwort (<i>Ceratophyllum demersum</i>), which is scarce in London. Marginal vegetation includes gypsywort (<i>Lycopus europaeus</i>) and planted yellow loosestrife (<i>Lysimachia vulgaris</i>). Mallard, tufted duck, coot and moorhen breed on this site, while Emperor dragonfly has been recorded here.</p>
Arnos Park	SBINC	20.8	0.9	W	<p>A small but varied park with a range of habitats including the Pymme's Brook which flows through the park. The park's woodland has a diverse range of tree species including sessile oak (<i>Quercus petraea</i>), wild service tree (<i>Sorbus torminalis</i>), hornbeam (<i>Carpinus betulus</i>), wild cherry (<i>Prunus avium</i>) and hazel (<i>Corylus avellana</i>). The ground flora includes wood anemone (<i>Anemone nemorosa</i>), wood millet (<i>Milium effusum</i>), red campion (<i>Silene dioica</i>), bluebell (<i>Hyacinthoides non-scripta</i>) and honeysuckle (<i>Lonicera periclymenum</i>). To the northeast of the park is an extensive area has</p>

## Ecological Assessment

Site Name	Designation	Size (ha)	Distance (km)	Direction	Description
					<p>been allowed to revert to rough grassland. Grasses include creeping bent (<i>Agrostis stolonifera</i>), false oat-grass (<i>Arrhenatherum elatius</i>), perennial ryegrass (<i>Lolium perenne</i>) and Yorkshire fog (<i>Holcus lanatus</i>). Floral species includes bird's-foot trefoil (<i>Lotus corniculatus</i>) and goat's-beard (<i>Tragopogon pratensis</i>).</p> <p>The Pymme's Brook is largely channelled and of limited ecological value, but fiddle dock (<i>Rumex pulcher</i>), marsh yellow-cress (<i>Rorippa palustris</i>), and pendulous sedge (<i>Carex pendula</i>) grow nearby. An area of damp amenity grassland retains marsh foxtail (<i>Alopecurus geniculatus</i>) and cuckoo-flower (<i>Cardamine pratensis</i>).</p> <p>The Piccadilly line crosses the park on a viaduct at its western end and the site is extended to include its railsides, and the Bounds Green Brook running south from the park. The steep scrub covered rail embankments which are contiguous with Arnos Park are vegetated with field maple (<i>Acer campestre</i>), hazel, common hawthorn (<i>Crataegus monogyna</i>) and cherry (<i>Prunus avium</i>). In contrast railsides further south adjacent to the sidings are sheltered and shaded by ash (<i>Fraxinus excelsior</i>) and common hawthorn.</p> <p>The course of Bounds Green Brook immediately to the south of the park runs through a narrow concrete culvert with vegetated bank including hazel, common hawthorn and wild rose (<i>Rosa</i> sp.). Further south the site broadens as the watercourse runs alongside an avenue of mature horse chestnuts (<i>Aesculus hippocastanum</i>). Sections of the brook have natural banks with broad-buckler fen (<i>Dryopteris dilatata</i>), pendulous sedge (<i>Carex pendula</i>) and ivy (<i>Hedera helix</i>). To the south of this is a grassy clearing by the brook. Avifauna includes grey heron, grey wagtail, mistle thrush, blackcap and willow warbler.</p>
New River Sports Centre, White Hart Lane Recreation Ground & Woodside Park	SLINC	23.37	0.9	S	<p>This SLINC comprises three large community open spaces, which together form a substantial area of parkland and amenity grassland in an area deficient in accessible natural green space. The site also supports two ancient pollard oaks on the edge beside Wolves Lane, while White Hart Lane Recreation Ground has a small lake and a former nursery. Mature trees, including further fine old oaks, and hedges are found throughout.</p>

## Overview of Protected, Notable and Invasive Species in London

This section of this report outlines the status of protected and notable species in London. The status of these species on the Site is fully discussed in section 3. Relevant conservation status and legislation is presented in Appendix D and E.

### Non-native invasive species in Greater London

London is an extremely urbanised area and is a major international port for both people and goods, this in addition to its climate and major levels of construction has encouraged the spread of a number of non-native invasive species that are becoming pests. Therefore, in addition to those species listed on Schedule 9 of the Wildlife and Countryside Act (WCA) (1981, as amended) there is a London Species Initiative (LSI)<sup>Error! Bookmark not defined.</sup> Managed by the London Biodiversity Partnership, which lists non-native invasive species that should be controlled in London. Species potentially relevant to the Site include those presented in A3.

Table A.3: Potential Schedule 9 (WCA 1981, as amended) or LSI species

Common Name	English Name	Status
Japanese Knotweed	<i>Fallopia japonica</i>	Schedule 9 and LSI
Cotoneaster (numerous)	<i>Cotoneaster</i> spp.	Schedule 9 and LSI
Rhododendron	<i>Rhododendron ponticum</i>	Schedule 9 and LSI
Indian (or Himalayan balsam)	<i>Impatiens glandulifera</i>	Schedule 9 and LSI
Virginia creeper	<i>Parthenocissus quinquefolia</i>	Schedule 9
Montbretia	<i>Crocsmia x crocosmiiflora</i>	LSI
Cherry Laurel	<i>Prunus laurocerasus</i>	LSI
False acacia	<i>Robinia pseudoacacia</i>	LSI
Green alkanet	<i>Pentaglottis sempervirens</i>	LSI
Butterfly-bush	<i>Buddleia davidii</i>	LSI
Snowberry	<i>Symphoricarpos albus</i>	LSI
Tree of heaven	<i>Ailanthus altissima</i>	LSI
Holm oak	<i>Quercus ilex</i>	LSI
Passion flower	<i>Passiflora caerulea</i>	LSI
Spanish bluebell	<i>Hyacinthoides hispanica</i> & <i>H. x massartiana</i>	LSI
Holm oak	<i>Quercus ilex</i>	LSI

## Bats in Greater London

From previous Arcadis work in London and from data from the London Bat Group the most likely bats species to be present are common and soprano pipistrelle (*Pipistrellus pipistrellus* and *P. pygmaeus*) which are by far the more frequent, followed by Daubenton's (*Myotis daubentoni* in the vicinity of open water) noctule (*Nyctalus noctula*) and brown long-eared (*Plecotus auritus*). These are all London BAP species and S41 species with the exception of Daubenton's and common pipistrelle. Full details of the conservation status of these species and the results from the London Bat Group Species Action Plan Audit are presented in Appendix B Table B2.

In general, every borough will have bats present, as even in the inner boroughs there are usually some areas of suitable habitat that can provide feeding habitat for small numbers of common and light tolerant bat species such as soprano and common pipistrelles. In general, the outer boroughs with larger areas of more suitable habitat should be expected to have higher numbers of bats and a greater diversity of species.

## Birds in Greater London

There are a number of bird species that although relatively common are in decline and have been highlighted S41 or London Priority BAP species and/or birds of conservation concern that have the potential to be present (Table 2).

Table A:4: *Birds of conservation concern associated with London*

Common Name	English Name	Status	Typical London habitats
Black redstart	<i>Phoenicurus ochrurus</i>	L	Traditionally found on brownfield sites around the built environment in proximity to standing or tidal Thames water
Dunnock	<i>Prunella modularis</i>	S41:L:	Associated with dense scrub and trees in private gardens and pocket parks
Grey heron	<i>Ardea cinerea</i>	L	associated with tidal Thames and standing water
House sparrow	<i>Passer domesticus</i>	S41:L:R	Associated with dense scrub and trees in private gardens and pocket parks traditionally a species associated with nesting in buildings
Peregrine	<i>Falco peregrinus</i>	L	Tidal Thames and the built environment using tall buildings for roosting and nesting and foraging on other birds particularly pigeons
Song thrush	<i>Turdus philomelos</i>	S41:L:R	Associated with dense scrub and trees in private gardens and pocket parks
Starling	<i>Sturnus vulgaris</i>	S41:L:R	Built environment
Tree sparrow	<i>Passer montanus</i>	S41:L:R	Associated with dense scrub and trees in private gardens and pocket parks

Section 41 = S41: London BAP = L: R = Birds of Conservation Concern Red List

## Reptiles in Greater London

Records from SARG (Surrey Amphibian and Reptile Group) and the London Biodiversity Action Plan show that the presence of European Protected Species of reptile in the London area is generally very unlikely. Common lizard (*Zootoca vivipara*) and Slow worm (*Anguis fragilis*) are the most likely reptiles to be present followed by Grass snake (*Natrix natrix*) with Adder (*Vipera berus*) being unlikely to be present these are all S41 and London BAP species.

## Badger in Greater London

Badger is a London BAP species and can be found using private gardens, woodlands and parklands across London.

## Amphibians including Great Crested Newts (GCN) in Greater London

GCN are S41 and London BAP species, that while uncommon are found breeding in ponds associated with private gardens, from data available from Froglife (2012), 71 Sites across Greater London were surveyed where historical GCN records were identified, of none of these sites were located within the London Borough of Barnet<sup>14</sup>. Of the other amphibians that are London BAP species Common frog (*Rana temporaria*), palmate newt (*Triturus helveticus*) and Common toad (*Bufo bufo*), common toad is also a S41 species

## Other Potentially Relevant S41 and London BAP species

There are a number of other species that have the potential to be relevant to the Site:

- Black poplar (*Populus nigra*);
- Mistletoe (*Viscum album*);
- Hedgehog (*Erinaceus europaeus*); and
- Stag beetle (*Lucanus cervus*), there was an NBN record within 500m of the Site.

Table A:5: Designated sites descriptions

Designation	Description
Special Areas of Conservation (SAC)	Sites designated under European law and are the most important sites for wildlife in the UK, along with Special Protected Areas (SPAs). SACs are designated under the European Habitats Directive (Council Directive 92/43/EEC). Both the Habitats and Birds Directives provide for the creation of a network of protected areas across the EU, to be known as 'Natura 2000'. The designations aim to conserve important or threatened species and habitats and provide them with increased protection and management
Special Protected Areas (SPAs)	
National Nature Reserve (NNR)	Statutory reserves established for the nation under the Wildlife and Countryside Act, 1981. NNRs may be owned by a relevant national body, e.g. Natural England, or by established agreement; a few are owned and managed by non-statutory bodies. NNRs cover a selection of the most important sites for nature conservation in the UK.
Sites of Special Scientific Interest (SSSI)	Are areas notified under the Wildlife and Countryside Act 1981 by Natural England as being of special interest for nature conservation. SSSI notification forms the statutory bedrock for site protection. Biological SSSIs form a national network of wildlife sites, with each site being of national significance for its nature conservation value. Consultation and some form of agreement with the national statutory conservation agency is mandatory before any listed, potentially damaging development or change in land use can be carried out
Local nature reserves (LNR)	These are land owned, leased or managed by Local Authorities and designated under the National Parks and Access to the Countryside Act. These are sites of some nature conservation value managed for educational objectives. In some cases it is managed by a non-statutory body (e.g. the London Wildlife Trust). Local Authorities have the power to pass bylaws controlling (e.g.) access, special protection measures.

<sup>14</sup> Capital Great Crested Newts Revisited (2012). Project report – Public Web Edition

Designation	Description
Sites of Metropolitan Importance for Nature Conservation (SMINCs)	These are sites that contain the best examples of London's habitats. These sites are of strategic significance and are therefore of the highest priority against damage or loss
Sites of Borough Importance for Nature Conservation (SBINCs) Grades I and II	Sites of Borough Importance for Nature Conservation (SBINCs) Grades I and II are important in the context of the borough. The nature conservation quality of these sites varies and so these sites are graded as I or II in relation to their nature conservation potential.
Sites of Local Importance for Nature Conservation (SINCs)	These are sites of particular importance to people nearby (such as residents and schools). Local sites are particularly important in areas otherwise deficient in nearby wildlife sites.

## Appendix B: Bat Habitat Suitability and London Population Status

Table B: 1 BCT (2016) – Habitat Suitability Criteria

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

Table B: 2 Bat species status in London from the London Bat Species Action Plan Audit

Common Name	Latin Name	UK Status	London Status	Notes
Greater horseshoe bat	<i>Rhinolophus ferrumequinum</i>	Endangered BAP Priority	Extinct	Last Greater London record from Oxleas Wood in 1953.
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	Endangered BAP Priority	Extinct	Last Greater London record from Abbey Wood (Woolwich) in 1952-3.
Whiskered bat	<i>Myotis mystacinus</i>	Vulnerable	Rare	Due to difficulty in separation, these are considered together. Occur rarely and in low numbers in outer London Boroughs such as Hillingdon, Richmond, Bexley and Bromley. One current known (winter) roost only.
Brandt's bat	<i>Myotis brandtii</i>	Vulnerable	Rare	
Natterer's bat	<i>Myotis nattereri</i>	Vulnerable	Scarce	Still relatively few records in Greater London. Most central locations are Highgate Wood and Hampstead Heath, otherwise Richmond and Hounslow and occasionally other outer London Boroughs. 8 current known roosts (mostly winter).
Daubenton's bat	<i>Myotis daubentoni</i>	Not Threatened	Locally frequent but declining	Relatively widespread and strongly associated with ponds, lakes & rivers. Occasional summer roosts have been found in trees on Wimbledon Common and in Ruislip Woods. Contrary to the national trend, this species is apparently declining in London and its sensitivity to increasing ambient light levels is a possible reason. 4 current known winter roosts.
Serotine	<i>Eptesicus serotinus</i>	Vulnerable	Rare; has declined	Serotines are found in outer London Boroughs, especially Bromley, Havering, Sutton and Richmond. 2 current known summer roosts, in Bromley and Teddington.
Noctule	<i>Nyctalus noctula</i>	Vulnerable; declining BAP Priority	Widespread but declining	The status of this large, wide-ranging bat is difficult to assess, but the past two decades have seen a rapid decline in the species and this mirrors the national trend. An exclusively tree-roosting bat; current known roosts number <10 London-wide.
Leisler's bat	<i>Nyctalus leisleri</i>	Vulnerable	Scarce	Leisler's bat has been recorded infrequently in London area, yet sightings have doubled in the last three years. New foraging sites for the species include the Barnes area, Wandsworth Common and Brent Reservoir. 3 current known roosts (Haringey, Bromley and Bexley).



## Ecological Assessment

Common Name	Latin Name	UK Status	London Status	Notes
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Not Threatened	Common	A widespread species, the common pipistrelle is believed to occur in all London boroughs. Roosts are still discovered relatively infrequently, however.
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	BAP Priority	Common	Also widespread and probably London's commonest bat. Apparently more associated with wetland habitats than its close relative, <i>P. pipistrellus</i> . Known roosts currently number 15-25, but many more pass undetected.
Nathusius's pipistrelle	<i>Pipistrellus nathusii</i>	Rare	Rare	Only recently confirmed as a UK breeding species. Detector records from an increasing list of sites include Lesnes Abbey Woods, Chislehurst Ponds and the Wetland Centre at Barnes. 1 known current roost site in bat boxes in Hounslow.
Brown long-eared bat	<i>Plecotus auritus</i>	Declining BAP Priority	Scarce	Brown long-eared bats are fairly secretive and may be under-recorded in Greater London, although reasons for the national decline are also likely to affect London's population. Roosts have been found in Bexley, Bromley, Hillingdon, Wandsworth, Kensington & Chelsea, Barnet, and Richmond.

NB: This audit is based on data from the London Bat Project collected in the mid-1980s, as well as that collected since by the London Bat Group and is therefore not systematic. This audit is the best possible understanding of the status of bats in London that can currently be realised by the London Bat Group.

## Appendix C: Selected Legislation, Nature Conservation Status and Policy

### Selected Legislation

Table C: 1 Legislation Summary

Receptor	Legislation
<b>Nesting Birds</b>	<p>The legislation relevant to the potential ecological constraints on site associated with nesting birds.</p> <p>All wild birds, their nests and eggs are protected under the Wildlife and Countryside Act 1981 (as amended). Section 1 of the Act makes it an offence to:</p> <ul style="list-style-type: none"> <li>intentionally kill, injure or take any wild bird;</li> <li>intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; or</li> <li>intentionally take or destroy an egg of any wild bird.</li> </ul> <p>It is also an offence to:</p> <ul style="list-style-type: none"> <li>intentionally disturb any wild bird included in Schedule 1 of the Act while it is building a nest or is in, on or near a nest containing eggs or young; or</li> <li>disturb dependent young of such a bird.</li> <li>Species listed on Schedule 1 include the black redstart, barn owl (<i>Tyto alba</i>), Cetti's warbler (<i>Cettia cetti</i>) and kingfisher (<i>Alcedo atthis</i>).</li> </ul> <p>There is no potential for Schedule 1 birds to be nesting on Site, the legislation regarding common nesting birds will be complied with due to the precautionary mitigation previously stated.</p>
<b>Badgers</b>	<p>Badgers are protected from inhumane killing or injury under Badgers Act (1992)<sup>15</sup>, this also protects their setts from damage and prohibits blocking access to their setts.</p>
<b>Bats</b>	<p>The legislation relevant to the constraint identified associated with bats.</p> <p>Bats are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species (Amendment) (EU exit) Regulations 2019.</p> <p>Bats are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are subject to the provisions of Section 9 of the Act, which make it an offence to:</p> <ul style="list-style-type: none"> <li>intentionally or recklessly disturb a wild animal listed on Schedule 5 whilst it is occupying a structure or place which it uses for shelter or protection;</li> <li>intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a wild animal listed on Schedule 5;</li> <li>sell, offer or expose for sale, or to possess or transport for sale alive or dead wild animal listed on Schedule 5 or any part of or anything derived from a wild animal listed on Schedule 5.</li> </ul> <p>Bats are also listed on Schedule 2 (European protected species of animals) of the Conservation of Habitats and Species (Amendment) (EU exit) Regulations 2019 and are subject to the provisions of Regulation 41 which makes it an offence to:</p> <ul style="list-style-type: none"> <li>deliberately capture, injure or kill any wild animal of a European protected species;</li> <li>deliberately disturb wild animals of any such species (where disturbance is likely to impair their ability to survive, breed or reproduce, rear or nurture their young; or to</li> </ul>

<sup>15</sup> Protection of Badgers Act 1992 (as amended)

Receptor	Legislation
	<p>hibernate or migrate; or to affect significantly the local distribution or abundance of the species);</p> <ul style="list-style-type: none"> <li>• damage or destroy a breeding Site or resting place of such an animal; or</li> <li>• be in possession of, control, transport, sell or exchange, or offer for sale or exchange any live or dead animal of such a species or any part of a wild animal or anything derived from an animal or any part of an animal of such a species.</li> </ul>
<b>Great Crested Newts</b>	<p>Great crested newts are a European Protected Species (EPS), listed on Annex II and IV of the EEC Directive on the Conservation of Natural Habitats and Wild Fauna and Flora, receiving protection under The Conservation of Habitats and Species (Amendment) (EU exit) Regulations 2019. This species is also afforded full protection under the Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (WCA 1981). Under such legislation it is an offence to:</p> <ul style="list-style-type: none"> <li>• Intentionally or recklessly kill, injure or take a great crested newt;</li> <li>• Possess or control any live or dead specimen or anything derived from a great crested newt;</li> <li>• Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt; and</li> <li>• Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.</li> </ul>
<b>Reptiles</b>	<p>The relevant legislation relevant to the constraint identified associated with reptiles All native British reptile species are protected under the Wildlife and Countryside Act 1981 (as amended). Reptiles are listed under Schedule 5 of the Act. The four more widespread species including common lizard, slow worm, adder and grass snake are subject to some of the provisions of Section 9 of the Act, which make it an offence to: *</p> <ul style="list-style-type: none"> <li>• intentionally kill or injure a reptile; or * sell, offer or expose for sale, or</li> <li>• to possess or transport for sale alive or dead reptile or any part of, or anything derived from, a reptile.</li> </ul>
<b>Other Mammals</b>	<p>Other mammals not protected by their own legislation are protected by the Mammal Act (1996). The Act makes provision for the protection of wild mammals from certain cruel acts.</p> <p>An offence is committed if any person mutilates, kicks, beats, nails, or otherwise impales, stabs, burns, stones, crushes, drowns, drags, or asphyxiates any wild mammal with intent to inflict unnecessary suffering.</p>
<b>Non Native Invasive Species</b>	<p>Numerous species are listed on Schedule 9 (of the Wildlife and Countryside Act 1981, as amended) whereby it is an offence to grow or to cause this species to grow in the wild. A species on Schedule 9 that commonly occurs in London is Japanese Knotweed (<i>Fallopia japonica</i>) which is also covered by the Environmental Protection Act (EPA) 1990 which designates this as a controlled waste.</p>

## Nature Conservation Status

### • Birds of Conservation Concern (BOCC) (2015)

The UK's leading bird conservation organisations worked together to produce The Population Status of Birds in the UK: Birds of Conservation Concern Four (BoCC).

Commonly referred to as the UK Red List for birds, this is the fourth review of the status of birds in the UK, Channel Islands and Isle of Man, and updates the last assessment in 2009. Using standardised criteria, 244 species with breeding, passage or wintering populations in the UK were assessed by experts from a range of bird NGOs and assigned to the Red, Amber or Green lists of conservation concern.

*Table C: 2 Bird Population Status Criteria for Birds of Conservation Concern in the UK*

Criteria	Status
<b>Red list criteria</b>	<p>Globally threatened</p> <p>Historical population decline in UK during 1800–1995</p> <p>Rapid (&gt; or =50%) decline in UK breeding population over last 25 years</p> <p>Rapid (&gt; or =50%) contraction of UK breeding range over last 25 years</p>
<b>Amber list criteria</b>	<p>Historical population decline during 1800–1995, but recovering; population size has more than doubled over last 25 years</p> <p>Moderate (25–49%) decline in UK breeding population over last 25 years</p> <p>Moderate (25–49%) contraction of UK breeding range over last 25 years</p> <p>Moderate (25–49%) decline in UK non-breeding population over last 25 years</p> <p>Species with unfavourable conservation status in Europe, termed Species of European Conservation Concern (SPEC)</p> <p>Five-year mean of 1–300 breeding pairs in UK</p> <p>&gt; or =50% of UK breeding population in 10 or fewer sites, but not rare breeders</p> <p>&gt; or =50% of UK non-breeding population in 10 or fewer sites</p> <p>&gt; or =20% of European breeding population in UK</p> <p>&gt; or =20% of northwest European (wildfowl), East Atlantic Flyway (waders) or European (others) non-breeding populations in UK</p>
<b>Green list</b>	No identified threat to the population's status

## Relevant Policy

### National

The Site survey, assessment and recommended mitigation ensure compliance with the following policies, any additional enhancement measures would further comply with these policies:

- **The National Planning Policy Framework (NPPF 2019)<sup>16</sup>:** The NPPF, sets out how the planning system should protect and enhance nature conservation interests. Section 15 is concerned with conserving and enhancing the natural environment (paragraphs 170 to 177).
  - Planning policies and decisions should contribute to and enhance the natural and local environment by:
    - protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
    - recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
    - minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

To protect and enhance biodiversity and geodiversity, plans should

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity<sup>56</sup>; wildlife corridors and steppingstones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- 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 and take opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.
- When determining planning applications, local planning authorities should apply the following principles:
  - development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.
- **The Natural Environment and Rural Communities (NERC) Act 2006<sup>17</sup>** places a duty upon public bodies to consider S41 lists flora, fauna and habitats (previously UK BAP habitats and species) as a material consideration in planning and to consider enhancement of biodiversity.
- **Biodiversity 2020:** A strategy for England's Wildlife and Ecosystem Services<sup>18</sup> includes a list of Habitats of Principal Importance in England (HPIEs) and Species of Principal Importance in England (SPIEs). These were previously included as Priority Habitats and Priority Species in the UK BAP.
- **25 Year Plan for the Environment (2018):** The underlying case for the valuation of ecosystem services is that it will contribute towards better decision-making, fully taking into account the costs and benefits of development to the natural environment. In its White Paper "The Natural Choice: securing the value of nature (HMG, 2011)<sup>19</sup>", and repeated in successive manifestos, the UK Government has stated it wishes to be "the first generation to leave the natural environment of England in a better state than it inherited...". The Natural Capital Committee (NCC, 2016) was set up to advise on how to deliver this objective, and the natural capital approach (which is based on the concept of valuing services delivered by the environment) is the key mechanism proposed to achieve this. The advice of the NCC has been central to the Government's 25-Year Plan to Improve

<sup>16</sup> MHCLG (2019) National Planning Policy Framework .

<sup>17</sup> Anon (2006) The Natural Environment and Rural Communities Act HMSO, London

<sup>18</sup> Department for Environment, Food and Rural Affairs (2011) *Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services*

<sup>19</sup> HM Government. (2011). The Natural Choice: securing the value of nature. Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/228842/8082.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228842/8082.pdf)

the Environment, published in January 2018<sup>20</sup>, whereby it has been acknowledged that protecting and growing natural capital is a vital component for economic success. It is also important to note that the application of this approach is not related to the total value of ecosystems but, rather, to valuing changes in ecosystem services.

## London

- **London Invasive Species Initiative (LISI)**<sup>21</sup>: Managed by the London Biodiversity Partnership, LISI lists non-native invasive species that should be controlled in London. Species relevant to the Scheme include Japanese Knotweed and Butterfly-bush.
- **London Biodiversity Action Plan (BAP)**<sup>22</sup>: Managed by the London Biodiversity Partnership (2006), the London BAP sets out priority habitats and species for the city. London BAP habitats relevant to the Scheme include reed beds, standing water and wasteland.
- **The London Plan – Intend to publish (2019)**<sup>23</sup>: The London Plan – Intend to Publish advocates a green infrastructure approach to conservation of the natural environment recognising its social and economic value. It also moves to recognise the practical actual financial value. There is also now the drive for development to incorporate quality green space (i.e. enhancements). The intend to publish version now includes an Urban Greening Factor for demonstration of these enhancements (Policy G5). The most relevant chapter in the Plan is Chapter 8 Green Infrastructure and Natural Environment (previously Chapter 7 in the adopted London Plan), with other relevant sections in the rest of the Plan, including Chapter 9 Sustainable Infrastructure. Relevant policies include G2 Greenbelt, G3 Metropolitan Open Land, G4 Open space, G5 Urban greening, G6 Biodiversity and access to nature, G7 Trees and woodlands, G8 Food growing and G9 Geodiversity.
- **The London Plan (2016), Housing Supplementary Planning Guidance (March 2016)**<sup>24</sup>: With regards to housing, recently a dedicated supplementary planning guidance has been produced, the relevant elements of which are presented below
  - Standard 40 and Policy 7.19 “Biodiversity and access to nature promotes a proactive approach to the protection, promotion and management of biodiversity across the capital” and that “Proposals for development should give full consideration to their direct and indirect effects on ecology. Ecological improvements can be achieved as part of Sustainable Urban Drainage Systems and incorporated into green or brown roofs, green walls and soft landscaping.”
  - Policies 7.19 and 7.21 “supporting biodiversity, protecting London’s trees, ‘green corridors and networks”.
  - Development proposals should also enhance provision of green infrastructure in the public realm, helping to mitigate and adapt to climate change (Policy 5.10 Urban Greening), extend tree cover (Policy 7.21), improve biodiversity (Policy 7.19).
  - Public, communal and private open spaces should be protected and enhanced, and where possible new open spaces should be created. This is supported by Policy 2.18 Green Infrastructure, Policy 7.18 Protecting open space, Policy 7.19 Biodiversity and Policy 7.21 Trees and Woodlands.
- **The Mayor’s Biodiversity Strategy (2002)**<sup>25</sup>: Connecting with London’s Nature: The Mayor’s Biodiversity Strategy provides a statutory framework for the delivery of biodiversity policies in London. It seeks to ensure that there is no overall loss of wildlife habitats in London.
- **The London Plan (2011), Sustainable Design and Construction Supplementary Planning Guidance (April 2014)**<sup>26</sup>:

<sup>20</sup> HM Government (2018) A Green Future: Our 25 Year Plan to Improve the Environment. January 2018 Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/673203/25-year-environment-plan.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/673203/25-year-environment-plan.pdf)

<sup>21</sup> London Invasive Species Plan (2012). Legislative and Information Exchange Framework. [online] Available at <http://www.londonisi.org.uk/tackling-inns/lisp/>. [Available June 2016]

<sup>22</sup> City of London (2009). *London Biodiversity Action Plan 2010 – 2015*

<sup>23</sup> Greater London Authority (2019) London Plan - Intend to Publish. Available at: [https://www.london.gov.uk/sites/default/files/intend\\_to\\_publish\\_-\\_clean.pdf](https://www.london.gov.uk/sites/default/files/intend_to_publish_-_clean.pdf)

<sup>24</sup> Greater London Authority (2016) London Plan 2016 Implementation Housing Supplementary Planning Guidance adopted in March 2016

<sup>25</sup> Greater London Authority (2002), *Connecting with Nature: The Mayor’s Biodiversity Strategy adopted in 2002*

<sup>26</sup> Greater London Authority (2011), *The London Plan Sustainable Design and Construction Supplementary Planning Guidance adopted in April 2014*

- Mayor's Priority - Developments should contribute to the Mayor's target to increase tree cover across London by 5% by 2025.
  - Mayor's Priority - There is no net loss in the quality and quantity of biodiversity.
  - Mayor's Priority - Developers make a contribution to biodiversity on their development site.
  - Mayor's Priority - Any loss of a tree/s resulting from development should be replaced with an appropriate tree or group of trees for the location, with the aim of providing the same canopy cover as that provided by the original tree/s.
- **London Environment Strategy – Draft for public consultation (2017) (Ref. 19)** the environment strategy highlights the importance of green infrastructure and Natural Capital designed and managed to:
    - Promote healthier living;
    - Lessen the impacts of climate change;
    - Improve air quality and water quality;
    - Encourage walking and cycling;
    - Store carbon; and
    - Improve biodiversity and ecological resilience.

**Arcadis (UK) Limited**

Arcadis House,  
34 York Way,  
London, N1 9AB  
United Kingdom

**[www.arcadis.com](http://www.arcadis.com)**