Hither Green to Grove Park Corridor

Establishing Metropolitan SINC Status

London Borough of Lewisham

Final report

Prepared by LUC

February 2023

Version	Status	Prepared	Checked	Approved	Date
1	Draft for client feedback	T. Hicks	E. Moseley	E. Moseley	13.06.2022
2	Updated following client feedback	T. Hicks	E. Moseley	E. Moseley	31.08.2022
3	Updated following client feedback	R. Warwick-Haller	E. Moseley	E. Moseley	09.02.2023

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Chapter 1
Introduction

1.1 LUC was appointed in April 2022 by London Borough of Lewisham to undertake ecological surveys of the Hither Green to Grove Park corridor to inform proposals to combine several sites to form a combined Site of Importance for Nature Conservation (SINC) of Metropolitan status.

1.2 It is proposed to combine the following sites to form a single SINC of Metropolitan status:

- Hither Green Station (borough grade SINC);
- Hither Green Sidings (borough grade SINC);
- Grove Park Nature Reserve (borough grade SINC);
- Cox's Wood (potential SINC); and
- Reigate Road Open Space (borough grade SINC).

1.3 These combined sites are hereafter referred to as 'the Site'.

1.4 This report builds upon data collated and recommendations made in the following reports:

- Addressing SINC Responses as Part of the Local Plan Process (2022) **[See reference** 1**]**; and
- Hither Green Sidings SINC Status Assessment (2020) **[See reference** 2**]**.

1.5 These reports recommended that in order to identify whether the combined sites meet the criteria for Metropolitan status the following assessments should be undertaken:

- A calcareous grassland assessment at Grove Park Nature Reserve;

- An assessment of wet woodland indicators at Hither Green Sidings; and
- Species assessments for the following priority species for Lewisham at each of the component sites as identified within the 2020 Preliminary Ecological Assessment reports:
  - Invertebrates;
  - Reptiles;
  - Breeding birds; and
  - Hedgehogs.
- Species assessment for the following priority species for Lewisham at each of the component sites as identified by the Council's Ecological Regeneration Manager:
  - Bats.

1.6 This report presents the results of these surveys and collates desk study information. It also provides an updated review of the technical evidence regarding the creation a SINC of Metropolitan status.

Consultation

1.7 Consultation with the London Wildlife Trust, London Wildlife Sites Board and the Council's Ecological Regeneration Manager was undertaken to ensure that key habitats and species were appropriately assessed, and the findings of each assessment were reviewed in line with London Wildlife Trust and London Wildlife Sites Board's guidance and recommendations.

Chapter 2
Methodology

Desk Study

2.1 To provide additional background and to highlight likely features or species groups of interest, a study of available biological records was undertaken to identify sites designated for their nature conservation value, and existing records of protected or notable species of relevance to the Site. A search of the following resources was undertaken, within a 2km radius from the Site boundary:

- Greenspace Information for Greater London (GiGL);
- Multi-Agency Geographical Information for the Countryside (MAGIC);
- Ordnance Survey (OS) mapping; and
- Aerial photography.

2.2 An extensive number of documents were provided by London Borough of Lewisham and members of the public for the component sites. A review of these were undertaken to gain further insight on the biodiversity interest of the combined sites and wider area. Documents which were reviewed included:

- 2021 Grove Park Species Records (2021). Unpublished species records by Stephen Kenny of Ringway Community Centre.
- Biodiversity Impact Assessment. Former Pink Willow Tree Riding Establishment, Hither Green, Lewisham, SE12 0NL (2021). Kingfisher Ecology.
- Birds Seen in Grove Park Nature Reserve (2022). Unpublished bird records by a local resident, Nicole Burgum.

- Brachymeria tibialis (Walker) (Hymenoptera: Chalcididae), Confirmed As A British Species (2008) Richard Jones.
- Butterfly Transect Records (2019). Unpublished results of a butterfly transect in 2019 by Stephen Kenny of Ringway Community Centre.
- Ecological Impact Assessment. Former Pink Willow Equestrian Centre, Ronver Road, Hither Green, London Borough Of Lewisham (2019) Kingfisher Ecology.
- Hither Green Sidings SINC Status Assessment (2020) The London Wildlife Trust.
- Hither Green Sidings SINC, Lewisham. Preliminary Ecological Appraisal (2013) The Ecology Consultancy.
- Letter on Former Pink Willow Equestrian Centre, Lewisham (2022) Gary Grant.
- Management Plan for Grove Park Nature Reserve 2020/21 to 2024/25 (2020) Complete Ecology.
- Railway Children Walk, Reigate Road Grove Park, London SE12: Preliminary Ecological Appraisal (2020) Denis J Vickers.
- Short Communication (2010) Richard Jones.
- Site Ecological Conditions Update Letter - APP/C5690/W/20/3254911: Willow Tree Riding Establishment, Hither Green, Lewisham SE12 0NL (2020) Kingfisher Ecology.
- Statement on Ecology for Willow Tree Riding Establishment, Ronver Road, Lewisham, London (2022) Rachel Hacking Ecology
- The Ringway Gardens 268 Baring Road, Grove Park, London, SE12 0DS: Preliminary Ecological Appraisal (2020) Denis J Vickers.

2.3 The absence of a species from biological records cannot be taken to represent actual absence. Species distribution patterns should be interpreted with caution as they may reflect survey/reporting effort rather than actual distribution.

Site Walkover

2.4 The Site was surveyed using the Greater London Authority's (GLA) Open Space and Habitat Survey Methodology **[See reference** 3**]** which has been specifically developed to enable the identification of SINCs and enables the collection of the key site Information.

2.5 Detailed plant species lists were only collected for species-rich or particularly notable habitats as per the GLA methodology.

2.6 In addition, consideration was given to:

- Species and habitat significance at a London level; and
- The ecological function of the five component sites in combination as one cohesive corridor.

Species Appraisal

2.7 The suitability of the Site to support protected or notable species was considered during the Site walkover. Species considered included those identified during the desk study, or those considered appropriate by the surveyor during the survey.

2.8 Detailed species surveys were not completed, however, based on an understanding of species ecology, consideration was given to the Site's potential to provide sheltering or foraging habitat. Suitability for each species was considered according to current good practice guidance **[See reference** 4**]**.

2.9 The Site Walkover was undertaken between 23rd and 27th May 2022 by Tom Hicks BSc (Hons), a Qualifying Member of CIEEM, and Rosalind Warwick-Haller BSc (Hons) MSc, a Qualifying Member of CIEEM. Weather conditions during the surveys were mild with occasional rain showers.

Habitat Condition Assessment

2.10 Notable habitats were also subject to a dedicated 'condition assessment' **[See reference** 5**]** . Habitat condition assessments were undertaken by Tom Hicks and Rosalind Warwick-Haller during the Site Walkover. The 'condition' of the habitat is considered a measure of habitat quality and measures the 'working-order' against the optimal potential of habitat type. Assessment criteria cover broad habitat types, therefore further clarification is provided and professional judgement used to assign condition where appropriate.

Calcareous Grassland Assessment

2.11 A detailed botanical survey of the calcareous grassland within Grove Park was undertaken on 20th May 2022 by Katie Luxmoore BSc (Hons) MSc ACIEEM. Weather conditions during the survey were mild and cloudy, with occasional light rain.

2.12 The survey methodology was in accordance with the NVC approach **[See reference** 6**]**. The survey involved recording plant species and relative abundance within 2m x 2m quadrats. The average sward height was also recorded for each quadrat. Species abundance was measured using the DOMIN scale a shown in Table 2.1.

Table 2.1: DOMIN Scale of Abundance

Percentage of Cover	DOMIN Scale
91-100	10
76-90	9
51-75	8
34-50	7

Percentage of Cover	DOMIN Scale
26-33	6
11-25	5
4-10	4
Several (10+) individuals	3
Many (4-10) individuals	2
Few (1-4) individuals	1

2.13 Quadrats groups were established by the surveyor's interpretation of stands of homogenous vegetation. Quadrat groups were defined as follows:

- Northern section of the grassland – four quadrats were sampled in this area, which comprised species indicative of more neutral soil conditions.
- Southern section of the grassland – four quadrats were sampled in this area, which included species indicative of calcareous soil conditions.

2.14 Species were assigned a constancy score of "I" to "V" depending on the number of quadrats they were recorded within. Table 2.2 shows the constancy score categories.

Table 2.2: Constancy Score

Percentage Occurrence in Total Number of Quadrat Samples	Constancy
81-100	V
61-80	IV
41-60	III
21-20	II

Interpretation of Calcareous Grassland Assessment

2.15 The survey findings were interpreted in line with the standard NVC plant community classification system **[See reference** 7**]** using a combination of professional judgement and Modular Analysis of Vegetation Information System (MAVIS) software.

Wet Woodland Assessment

2.16 A detailed botanical survey of the woodland within Hither Green Sidings was undertaken on 24th May 2022 by Katie Luxmoore. Weather conditions during the survey were mild and cloudy, with occasional light rain.

2.17 The survey aimed to confirm the presence, extent and quality of the wet woodland, a UK Biodiversity Action Plan Priority Habitat. The survey methodology comprised recording key indicator species and conditions such as ground water, ground flora and tree species.

Interpretation of Wet Woodland Assessment

2.18 The survey findings were interpreted in line with the standard NVC plant community classification system **[See reference** 8**]** using professional judgement.

Bat Surveys

Habitat Appraisal

2.19 The Site and surrounding habitats were assessed in relation to their suitability to support foraging, commuting and roosting bats.

2.20 These assessments were undertaken by Tom Hicks (NE Bat Level 1 Class Licence holder: 2021-10076-CLS-CLS) and Rosalind Warwick-Haller.

2.21 Woodland at each of the component sites were classified as to their Bat Roost Suitability (BRS), using the criteria provided below, with due consideration to good practice guidance **[See reference** 9**]** **[See reference** 10**]** **[See reference** 11**]**.

Bat Roost Suitability (BRS) Categories

Negligible

- Roosting Habitat Features:
  - Negligible habitat features likely to support roosting, commuting or foraging bats.
- Commuting and Foraging Habitat Features:
  - Negligible habitat features likely to support roosting, commuting or foraging bats.

Low

- Roosting Habitat Features:

- Structures in this category offer one or more potential roost sites for individual, opportunistically roosting bats. These sites do not offer the space, shelter or appropriate conditions to support large numbers of bats or maternity roosts.
- Tree in this category include those of sufficient size and age to support suitable roosting features, but none are visible from the ground.

- Commuting and Foraging Habitat Features:
  - Habitat on and around the site could be used by a small number of commuting bats. This category includes densely urbanised landscapes or linear vegetation features poorly connected to the wider landscape.

Moderate

- Roosting Habitat Features:
  - Structures and trees in this category offer one or more roost site that, due to their space, shelter or conditions, offer roosting potential for a range of species. Roosts may be more permanent, rather than opportunistic. Small maternity roosts of common species may form in one of these roost sites.
- Commuting and Foraging Habitat Features:
  - Habitat on and around the site is well-connected to wider continuous habitat and offers commuting and foraging habitat to a larger number of bats across a number of species (e.g. tree lines or linked gardens in the urban context, or continuous hedge/tree lines and watercourses in an agricultural setting).

High

- Roosting Habitat Features:
  - Structures and trees in this category have one or more potential roost sites that are suitable for large number of bats. Roosts are likely to be

permanent and include maternity roosts. Potential roost sites exist for a wide range of species or species of particular conservation interest.

- Commuting and Foraging Habitat Features:
  - Habitat on and around the site is diverse, continuous and linked to extensive suitable habitat. This category includes well-vegetated rivers, streams, hedgerows and woodland edge.
  - Habitat is sufficiently diverse to offer opportunities to a wide range of species or those of particular conservation interest.

Nocturnal Bat Activity Surveys – Static Monitoring

2.22 To provide additional data on bat activity across the Site, a Static Monitoring Point (SMP) survey was carried out over four nights between 23rd and 27th May 2022.

2.23 SMP locations were chosen to incorporate strategic features in the landscape likely to be of greatest importance for commuting and foraging across the Site. Anabat Express frequency division detectors were left out for four consecutive nights to collect data for analysis. Bat sonograms were logged for subsequent analysis and species identification using AnalookW software.

2.24 SMP locations are summarised below in Table 2.3.

Table 2.3: Static Monitoring Point Locations

Reference	Habitat Description	Grid Reference
SMP A (Cox's Wood)	Semi-natural broadleaved woodland	TQ 4035 7268
SMP B (Grove Park)	Calcareous grassland	TQ 4004 7293

Camera Trapping

2.25 Remote camera monitoring was established to provide evidence of mammal use (such as hedgehog; *Erinaceus europaeus*, badger; *Meles meles* and fox; *Vulpes vulpes*). Two camera traps (CT) were positioned across the Site and were positioned to cover areas deemed to be of high suitability for these species.

2.26 Camera data was collected over four nights between 23rd and 27th May 2022. Footage was reviewed to provide additional information on the use of the Site by these species.

2.27 CT locations are summarised below in Table 2.4.

Table 2.4: Camera Trap Locations

Reference	Habitat Description	Grid Reference
CT A (Cox's Wood)	Semi-natural broadleaved woodland	TQ 4035 7268
CT B (Grove Park)	Calcareous grassland	TQ 4004 7293

Limitations

2.28 It is important to note that ecological surveys provide information regarding the ecological baseline of a Site for only a 'snapshot' of time. Therefore, if significant time lapses between the surveys, updated ecological surveys may be required to identify any change in the conditions, such as natural succession of habitats, or local extinction or colonisation of species.

2.29 There were restricted views/access to some sections of the following component sites despite Lewisham Council unsuccessfully contacting the land owners:

- Hither Green Station;
- Hither Green Sidings; and
- Grove Park Nature Reserve.

2.30 This was however not considered a constraint to the survey findings, as sufficient data was able to be collected to assess the sites in line with the approach detailed above.

Chapter 3

Results

Desk Study

3.1 The findings of the desk study are presented below. The first section summarises statutory and non-statutory designated sites within the search area. The second section summarises records of protected and notable species of relevance to the Site within 2km.

Statutory Designated Sites within the Desk Study Search Area

Grove Park

- Designation: Local Nature Reserve (LNR)
- Qualifying Features: Various habitats including substantial area of calcareous grassland.
- Distance/Orientation: Within Site boundary

Burnt Ash Pond

- Designation: Local Nature Reserve (LNR)
- Qualifying Features: Pond with important amphibian population.
- Distance/Orientation: 560m north-east

Downham Woodland Walk

- Designation: Local Nature Reserve (LNR)
- Qualifying Features: Ancient woodland strip.
- Distance/Orientation: 990m west

Sutcliffe Park

- Designation: Local Nature Reserve (LNR)
- Qualifying Features: Open grassland, meadow and wetland.
- Distance/Orientation: 1890m north-east

Non-Statutory Designated Sites within the Desk Study Search Area

Grove Park Nature Reserve

- Designation: SINC Borough
- Qualifying Features: Allotments, chalk grassland, pond/lake, scattered trees, scrub, secondary woodland, semi-improved neutral grassland, tall herbs, wet ditches.
- Distance/Orientation: Within Site boundary

Hither Green Station

- Designation: SINC Borough
- Qualifying Features: Running water, scattered trees, scrub, secondary woodland, semi-improved neutral grassland, tall herbs.
- Distance/Orientation: Within Site boundary

Hither Green Sidings

- Designation: SINC Borough
- Qualifying Features: Allotments, bare ground, marsh/swamp, pond/lake, ruderal, scattered trees, scrub, semi-improved neutral grassland, tall herbs.
- Distance/Orientation: Within Site boundary

Hither Green Cemetery, Lewisham Crematorium and Reigate Road Open Space

- Designation: SINC Borough
- Qualifying Features: Amenity grassland, flower beds, hedge, planted shrubbery, pond/lake, ruderal, scattered trees, scrub, semi-improved neutral grassland, tall herbs, vegetated well/tombstones.
- Distance/Orientation: Partially within Site boundary

Gilmore Road Triangle

- Designation: SINC Local
- Qualifying Features: Amenity grassland, scattered trees, scrub, semi-improved neutral grassland, tall herbs.
- Distance/Orientation: 210m north

Manor House Gardens

- Designation: SINC Borough
- Qualifying Features: Amenity grassland, bare ground, flower beds, hedge, planted shrubbery, pond/lake, running water, scattered trees, semi-improved neutral grassland, tall herbs.

- Distance/Orientation: 540m north-east

River Quaggy and Manor Park

- Designation: SINC Local
- Qualifying Features: Amenity grassland, bare ground, ruderal, running water, scattered trees, scrub, tall herbs, vegetated wall/tombstones.
- Distance/Orientation: 540m north

Sydenham Cottages Nature Reserve

- Designation: SINC Local
- Qualifying Features: Buildings, native hedge, native woodland, scattered trees, semi-improved neutral grassland, tall herbs.
- Distance/Orientation: 550m east

Burnt Ash Pond Nature Reserve

- Designation: SINC Borough
- Qualifying Features: Hedge, marsh/swamp, pond/lake, scattered trees, scrub, semi-improved neutral grassland.
- Distance/Orientation: 560m north-east

Chinbrook Meadows

- Designation: SINC Borough
- Qualifying Features: Amenity grassland, marsh/swamp, planted shrubbery, running water, scattered trees, scrub, semi-improved neutral grassland, tall herbs.
- Distance/Orientation: 660m south

Lewisham to Blackheath Railsides

- Designation: SINC Borough
- Qualifying Features: Secondary woodland, scrub, bare, tall herbs.
- Distance/Orientation:780m north-east

Mountsfield Park

- Designation: SINC Borough
- Qualifying Features: Amenity grassland, hedge, planted shrubbery, scattered trees, scrub, semi-improved neutral grassland, tall herbs.
- Distance/Orientation: 820m west

Mottingham Nature Reserve and River Quaggy

- Designation: SINC Borough
- Qualifying Features: Bare ground, hedge, improved agricultural grassland, pond/lake, roughland, ruderal, running water, scattered trees, scrub, secondary woodland, semi-improved neutral grassland, tall herbs, wet ditches.
- Distance/Orientation: 950m east

Gilmore Road Triangle

- Designation: SINC Local
- Qualifying Features: Native woodland, non-native woodland, planted shrubbery, scattered trees, scrub, semi-improved neutral grassland, tall herbs.
- Distance/Orientation: 970m north

Whitefoot Recreation Ground

- Designation: SINC Local
- Qualifying Features: Amenity grassland, bare artificial habitat, native woodland, planted shrubbery, pond, scattered trees, scrub, tall herbs, wet marginal vegetation.
- Distance/Orientation: 1100m east

Downham Woodland Walk

- Designation: SINC Borough
- Qualifying Features: Amenity grassland, ancient woodland, bare ground, scattered trees, scrub, semi-improved neutral grassland, tall herbs.
- Distance/Orientation: 1160m west

Chinbrook Community Orchard and Allotments

- Designation: SINC Borough
- Qualifying Features: Orchard, allotments, scattered trees, scrub, orchard, bare, semi-improved neutral grassland, ruderal, roughland, tall herbs, allotments.
- Distance/Orientation: 1160m south-east

Durham Hill

- Designation: SINC Borough
- Qualifying Features: Amenity grassland, scattered trees, scrub, semi-improved neutral grassland, tall herbs.
- Distance/Orientation: 1260m south-west

Grove Park Cemetery and Chinbrook Comminity Orchard

- Designation: SINC Borough
- Qualifying Features: Cemetery, orchard, scattered trees, scrub, planted shrubbery, bare, semi-improved neutral grassland, amenity grassland, ruderal, tall herbs.
- Distance/Orientation:1260m south-east

Forster Memorial Park

- Designation: SINC Borough
- Qualifying Features: Amenity grassland, ancient woodland, hedge, planted shrubbery, secondary woodland, semi-improved neutral grassland, tall herbs.
- Distance/Orientation: 1320m west

Sundridge Park Golf Course, Elmstead Wood and Lower Marvels Wood

- Designation: SINC Borough
- Qualifying Features: Acid grassland, amenity grassland, ancient woodland, heathland, pond/lake, running water, scattered trees, secondary woodland.
- Distance/Orientation: 1570m south-east

Sidcup Road Grassland and Harmony Wood

- Designation: SINC Borough
- Qualifying Features: Acid grassland, running water, secondary woodland, unimproved neutral grassland.

- Distance/Orientation: 1656m north-east

Sutcliffe Park Flood Alleviation Scheme

- Designation: SINC Borough
- Qualifying Features: Pond/lake, reed bed, running water, wet grassland.
- Distance/Orientation: 1830m east

Protected and Notable Species within Desk Study Search Area

Plants

Strawberry Clover; *Trifolium fragiferum*

- Status: Red List Great Britain - Vulnerable
- Distance/Orientation: Within Grove Park Nature Reserve

Large-leaved Lime; *Tilia platyphyllos*

- Status: Nationally Scarce
- Distance/Orientation: 235m north

Sea-buckthorn; *Hippophae rhamnoides*

- Status: Nationally Scarce
- Distance/Orientation: 396m south-east

Jersey Cudweed; *Gnaphalium luteoalbum*

- Status: Wildlife and Countryside Act Schedule 8
- Distance/Orientation: 869m north-west

Medlar; *Mespilus germanica*

- Status: Local Species of Conservation Concern, Nationally Scarce
- Distance/Orientation: 1050m north

Juniper; *Juniperus communis*

- Status: Natural Environment Research Council Act Section 41 Local Priority Species, Local Species of Conservation Concern
- Distance/Orientation: 1057m east

Butcher's-broom; *Ruscus aculeatus*

- Status: Habitat and Species Directice 5
- Distance/Orientation: 1565m north-west

Greater Water-parsnip; *Sium latifolium*

- Status: Natural Environment Research Council Act Section 41 Local Priority Species, Local Species of Conservation Concern, Red List Great Britain - Endangered, Nationally Scarce
- Distance/Orientation: 1565m north-west

Bluebell; *Hyacinthoides non-scripta*

- Status: Wildlife and Countryside Act Schedule 8

- Distance/Orientation: 1603m south

Box; *Buxus sempervirens*

- Status: Local Species of Conservation Concern, Red List Great Britain – Data Defiecient, Nationally Rare
- Distance/Orientation: 1757m east

Invertebrates

Chalcidid ‘wasp’; *Brachymeria tibialis*

- Status: N/A
- Distance/Orientation: Within Grove Park Nature Reserve **[See reference** 12**]**

Bee; *Eucera longicornis*

- Status: UK Priority Species, Nationally Notable A
- Distance/Orientation: Within Grove Park Nature Reserve **[See reference** 13**]**

Stag Beetle; *Lucanus cervus*

- Status: Habitat and Species Directive Annex 2, Natural Environment Research Council Act Section 41, Local Priority Species, Nationally Notable B
- Distance/Orientation: Within Cox’s Wood **[See reference** 14**]**

Brown Hairstreak (Butterfly); *Thecla betulae*

- Status: Natural Environment Research Council Act Section 41, Nationally Scarce
- Distance/Orientation: Within Cox's Wood **[See reference** 15**]**

Cinnabar (Moth); *Tyra jacobaeae*

- Status: UK Priority Species
- Distance/Orientation: Within Grove Park Nature Reserve **[See reference** 16**]**

Dark-barred Twin-spot Carpet (Moth); *Xanthorhoe ferrugata*

- Status: UK Priority Species
- Distance/Orientation: Within Grove Park Nature Reserve **[See reference** 17**]**

White Ermine (Moth); *Spilosoma lubricipeda*

- Status: UK Priority Species
- Distance/Orientation: Within Grove Park Nature Reserve **[See reference** 18**]**

Small Blue; *Cupido Minimus*

- Status: Natural Environment Research Council Act Section 41, Local Priority Species, Local Species of Conservation Concern, Red List Great Britain - Near Threatened
- Distance/Orientation: 185m south-east

A True Bug; *Asiraca Clavicornis*

- Status: Local Species of Conservation Concern, Nationally Notable B
- Distance/Orientation: 405m east

Little Yellow-face Bee; *Hylaeus pictipes*

- Status: Local Spp of Conservation Concern, Nationally Notable A
- Distance/Orientation: 405m east

Brown-banded Carder Bee; *Bombus humilis*

- Status: Natural Environment Research Council Act Section 41, Local Priority Species, Local Species of Conservation Concern
- Distance/Orientation: 405m east

A True Fly; *Merzomvia westermanni*

- Status: Nationally Notable
- Distance/Orientation: 405m east

A Beetle; *Hypera meles*

- Status: Nationally Notable A
- Distance/Orientation: 419m east

A Bettle; *Peltodytes caesus*

- Status: Nationally Scarce
- Distance/Orientation: 812m east

Black Colonel; *Odontomyia tigrine*

- Status: Nationally Notable
- Distance/Orientation: 812m east

A Butterfly; *Lycaena phlaeas eleus*

- Status: Local Priority Species
- Distance/Orientation: 1065m south-east

Jersey Tiger; *Euplagia quadripunctaria*

- Status: Habitat and Species Directive Annex 2
- Distance/Orientation: 1073m north-west

Common Darter; *Sympetrum striolatum*

- Status: Red List Great Britain – Data Deficient
- Distance/Orientation: 1281m north-east

Essex Skipper; *Thymelicus lineola*

- Status: Local Priority Species
- Distance/Orientation: 1384m west

Small Skipper; *Thymelicus sylvestris*

- Status: Local Priority Species
- Distance/Orientation: 1502m south-west

Marsh Pond Snail; *Stagnicola palustris/fuscus/corvus*

- Status: Red List Great Britain – Data Deficient
- Distance/Orientation: 1906m west

Large Skipper; *Ochlodes sylvanus*

- Status: Local Priority Species
- Distance/Orientation: 1988m south-east

Red-shanked Carder Bee; *Bombus ruderarius*

- Status: Natural Environment Research Council Act Section 41, Local Priority Species, Local Species of Conservation Concern
- Distance/Orientation: 2008m south

Birds

Kestrel; *Falco tinnunculus*

- Status: Local Species of Conservation Concern, Bird-Amber
- Distance/Orientation: Within Grove Park Nature Reserve **[See reference 19]**

Black Redstart; *Phoenicurus ochruros*

- Status: Local Species of Conservation Concern, Nationally Scarce, Local Priority Species, Bird-Amber
- Distance/Orientation: Within Grove Park Nature Reserve **[See reference 20]**

Starling; *Sturnus vulgaris*

- Status: Local Priority Species, Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 122m south-east

Grey Wagtail; *Motacilla cinerea*

- Status: Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 122m south-east

House Sparrow; *Passer domesticus*

- Status: Natural Environment Research Council Act Section 41, Local Priority Species, Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 122m south-east

Dunnock; *Prunella modularis*

- Status: Local Priority Species
- Distance/Orientation: 122m south-east

Lesser Spotted Woodpecker; *Dryobates minor*

- Status: Local Priority Species, Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 122m south-east

Tawny Owl; *Strix aluco*

- Status: Local Priority Species

- Distance/Orientation: 613m south

Yellowhammer; *Emberiza citronella*

- Status: Natural Environment Research Council Act Section 41, Local Priority Species, Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 615m south

Swift; *Apus apus*

- Status: Local Priority Species
- Distance/Orientation: 818m north

Red Kite; *Milvus milvus*

- Status: Birds Directive Annex 1, Wildlife and Countryside Act Schedule 1 Part 1
- Distance/Orientation: 992m north-west

Song Thrush; *Turdus philomelos*

- Status: Local Priority Species, Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 1012m south-east

Brambling; *Fringilla montifringilla*

- Status: Wildlife and Countryside Act Schedule 1 Part 1
- Distance/Orientation: 1195m west

Woodcock; *Scolopax rusticola*

- Status: Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 1195m north

Short-eared Owl; *Asio flammeus*

- Status: Birds Directive Annex 1
- Distance/Orientation: 1293m west

Mistle Thrush; *Turdus viscivorus*

- Status: Local Priority Species, Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 1770m south-west

Lesser Redpoll; *Acanthis cabaret*

- Status: NERC Act Section 41, LPC Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 1910m north-east

Skylark; *Alauda arvensis*

- Status: Natural Environment Research Council Act Section 41, Local Priority Species, Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 1910m north-east

Kingfisher; *Alcedo atthis*

- Status: Birds Directive Annex 1, Wildlife and Countryside Ect Schedule Part 1, Local Priority Species

- Distance/Orientation: 1910m north-east

Tree Pipit; *Anhus trivialis*

- Status: Natural Environment Research Council Act Section 41, Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 1910m north-east

Pochard; *Aythya farina*

- Status: Local Priority Species, Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 1910m north-east

Lesser Whitethroat; *Curruca curruca*

- Status: Local Priority Species
- Distance/Orientation: 1910m north-east

House Martin; *Delichon urbicum*

- Status: Local Priority Species
- Distance/Orientation: 1910m north-east

Little Egret; *Egretta garzetta*

- Status: Birds Directive Annex 1
- Distance/Orientation: 1910m north-east

Reed Bunting; *Emberiza schoeniclus*

- Status: Natural Environment Research Council Act Section 41, Local Species of Conservation Concern
- Distance/Orientation: 1910m north-east

Herring Gull; *Larus argentatus*

- Status: Bird-Red
- Distance/Orientation: 1910m north-east

Lesser Black-backed Gull; *Larus fuscus*

- Status: Local Priority Species
- Distance/Orientation: 1910m north-east

Linnet; *Linaria cannabina*

- Status: Local Priority Species, Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 1910m north-east

Sand Martin; *Riparia riparia*

- Status: Local Priority Species
- Distance/Orientation: 1910m north-east

Whinchat; *Saxicola rubetra*

- Status: Local Species of Conservation Concern, Bird-Red
- Distance/Orientation: 1910m north-east

Redwing; *Turdus iliacus*

- Status: Wildlife and Countryside Act Schedule 1 Part 1, Bird-Red
- Distance/Orientation: 1910m north-east

Fieldfare; *Turdus pilaris*

- Status: Wildlife and Countryside Act Schedule 1 Part 1, Bird-Red
- Distance/Orientation: 1910m north-east

Amphibians

Smooth Newt

- Status: Habitat and Species Directive 5, Local Priority Species
- Distance/Orientation: Within Hither Green Sidings

Common Toad; *Bufo bufo*

- Status: Natural Environment Research Council Act Section 41, Local Priority Species, Local Species of Conservation Concern
- Distance/Orientation: Within Hither Green Sidings

Common Frog; *Rana temporaria*

- Status: Habitat and Species Directive 5, Local Priority Species
- Distance/Orientation: Within Hither Green Sidings

Reptiles

Common Lizard; *Zootoca vivpara*

- Status: Wildlife and Countryside Act Schedule 5, Natural Environment Research Council Act Section 41, Local Priority Species, Local Species of Conservation Concern
- Distance/Orientation: Within Cox's Wood **[See reference** 21**]** and Hither Green Sidings **[See reference** 22**]**

Mammals

Hedgehog; *Erinaceus euroaeus*

- Status: Natural Environment Research Council Act Section 41, Local Priority Species, Local Species of Conservation Concern, Red List Great Britain - Vulnerable
- Distance/Orientation: Within Grove Park Nature Reserve **[See reference** 23**]**

Badger; *Meles meles*

- Status: Protection of Badgers Act 1992
- Distance/Orientation: Confidential

Serotine; *Eptesicus serotinus*

- Status: Habitat and Species Directive Annex 4, Conservation of Habitats and Species Regulations 2010 Schedule 2, Wildlife and Countryside Act Schedule 5 Section 9.4b and 9.4c, Local Priority Species, Local Species of Conservation Concern, Red List Great Britain - Vulnerable

- Distance/Orientation: 160m south-east

Common Pipistrelle; *Pipistrellus pipistrellus*

- Status: Habitat and Species Directive Annex 4, Conservation of Habitats and Species Regulations 2010 Schedule 2, Wildlife and Countryside Act Schedule 5 Section 9.4b and 9.4c, Local Species of Conservation Concern
- Distance/Orientation: 1008m south-east

Noctule; *Nyctalus noctule*

- Status: Habitat and Species Directive Annex 4, Conservation of Habitats and Species Regulations 2010 Schedule 2, Wildlife and Countryside Act Schedule 5 Section 9.4b and 9.4c, Natural Environment Research Council Act Section 41, Local Priority Species, Local Species of Conservation Concern
- Distance/Orientation: 1273m north-west

Soprano pipistrelle; *Pipistrellus pygmaeus*

- Status: Habitat and Species Directive Annex 4, Conservation of Habitats and Species Regulations 2010 Schedule 2, Wildlife and Countryside Act Schedule 5 Section 9.4b and 9.4c, Natural Environment Research Council Act Section 41, Local Priority Species, Local Species of Conservation Concern
- Distance/Orientation: 1910m north-east

Nathusius's Pipistrelle; *Pipistrellus nathusii*

- Status: Habitat and Species Directive Annex 4, Conservation of Habitats and Species Regulations 2010 Schedule 2, Wildlife and Countryside Act Schedule 5 Section 9.4b and 9.4c, Local Priority Species, Local Species of Conservation Concern, Red List Great Britain Near Threatened

- Distance/Orientation: 2017m north

Site Walkover

Habitat Appraisal

3.2 Notable habitats recorded across the Site included:

- Semi-natural broadleaved woodland (including wet woodland);
- Unimproved calcareous grassland;
- Semi-improved neutral grassland;
- Dense scrub;
- Ponds; and
- Open mosaic habitat.

3.3 Further details for notable habitats within each component site is provided within Appendix A.

Semi-Natural Broadleaved Woodland

3.4 A large proportion of the Site comprised semi-natural broadleaved woodland. The woodland was relatively immature and likely a result of natural succession. Veteran trees and dead wood habitat was noticeably throughout the Site. Due to under management, open space was lacking within most of the woodland resulting in a poor ground flora assemblage. No rare or notable species were recorded. Frequent canopy species included sycamore; *Acer pseudoplatanus*, oak; *Quercus* sp. and ash; *Fraxinus excelsior*.

3.5 There was also an area of wet woodland at Hither Green Sidings. Full details of the wet woodland assessment are provided in the Wet Woodland Assessment section below.

Unimproved Calcareous Grassland

3.6 Full details of the unimproved grassland at Grove Park Nature Reserve are provided in the Calcareous Grassland Assessment section below.

Semi-Improved Neutral Grassland

3.7 Significant areas of semi-improved neutral grassland were recorded at Grove Park Nature Reserve and Reigate Road Open Space. No rare or notable species were recorded.

3.8 Full details of the grassland at Grove Park Nature Reserve are provided in the Calcareous Grassland Assessment section below.

3.9 The grassland at Reigate Road Open Space had been recently seeded with a meadow mix in 2020. The grassland was dominated by crested dog's tail; *Cynosurus cristatus* with occasional common bird's-foot-trefoil; *Lotus corniculatus*, oxeye daisy; *Leucanthemum vulgare*, yarrow; *Achillea millefolium* and ribwort plantain; *Plantago lanceolata*, and rarely red clover; *Trifolium pratense*, common vetch and white clover; *Trifolium repens*.

Dense Scrub

3.10 Areas of dense scrub were recorded across the Site but most notably at Hither Green Sidings and Grove Park Nature Reserve. No rare or notable species were recorded.

3.11 Scrub at Hither Green Sidings was dominated by bramble; *Rubus fruticosus* agg. with occasional bindweed; *Calystegia sepium*.

3.12 The scrub at Grove Park Nature Reserve was much more diverse comprising frequent willow; *Salix* sp., hawthorn; *Crataegus monogyna*, bramble with occasional oak and cherry; *Prunus* sp., sycamore, birch; *Betula* sp. and ash were rarely noted.

Ponds

3.13 Ponds were recorded within Hither Green Station, Hither Green Sidings and Grove Park Nature Reserve. No rare or notable species were recorded.

3.14 The pond at Hither Green Nature Reserve comprised a small woodland pond bound by marginal vegetation including Japanese knotweed; *Fallopia japonica*. It was considered suitable for breeding amphibians and a variety of invertebrates, including dragonfly and damselfly.

3.15 The pond at Hither Green Sidings was used for recreational angling. It was subject to significant recreational disturbance and erosion. Due to the dense fish stock it is unlikely to support a significant breeding amphibian population.

3.16 The pond at Grove Park Nature Reserve comprised a small woodland pond with 100% duckweed cover. It was considered suitable for breeding amphibians and a variety of invertebrates, including dragonfly and damselfly. Several common frogs; *Rana temporaria* were noted during the survey.

Open Mosaic Habitat

3.17 Previous reports identified 0.97ha of open mosaic habitat within Hither Green Sidings **[See reference** 24**]** **[See reference** 25**]**. Due to restricted views/access this habitat was not reassessed.

Species Appraisal

Bats

3.18 The Site as a whole supported diverse and continuous habitats subject to low levels of light pollution. Habitats of notable value are summarised below:

- Woodland – suitable for specialist species such as brown long-eared *Plecotus auritus* and Brandt's bat; *Myotis brandti*.
- Woodland edge – suitable for most species including common pipistrelle; *Pipistrellus pipistrellus* and soprano pipistrelle; *Pipistrellus pygmaeus*.
- Grassland – suitable for species which prefer to feed in the open such as noctule; *Nyctalus noctula*.
- Ponds – suitable for specialist species such as Daubenton's *Myotis daubentonii* and Nathusius pipistrelle; *Pipistrellus nathusii*.

3.19 Therefore, the Site was determined to be of high suitability for commuting and foraging bats.

3.20 A relatively low number of roosting features were recorded across the Site, attributed to relatively young age of trees and woodland. Grove Park Nature Reserve was considered the most suitable for roosting bats due the higher number of semi-mature trees. Tree suitable for maternity roosts were only rarely noted.

3.21 Therefore, the Site was determined to be of moderate suitability for roosting bats.

3.22 The habitat appraisal for each site component is summarised below.

Bats – Habitat Appraisal

Hither Green Station

- Commuting and Foraging Suitability: High – Habitats diverse and continuous.
- Roosting Suitability: Moderate – Relatively low number of roosting opportunities noted.

Hither Green Sidings

- Commuting and Foraging Suitability: High – Habitats diverse and continuous.
- Roosting Suitability: Moderate – Relatively low number of roosting opportunities noted.

Grove Park Nature Reserve

- Commuting and Foraging Suitability: High – Habitats diverse and continuous.
- Roosting Suitability: Moderate – Relatively low number of roosting opportunities noted.

Cox's Wood

- Commuting and Foraging Suitability: High – Habitats continuous.
- Roosting Suitability: Low – Very limited roosting opportunities noted.

Reigate Road Open Space

- Commuting and Foraging Suitability: High – Habitats diverse and continuous.
- Roosting Suitability: Low – Very limited roosting opportunities noted.

Hedgehog

3.23 The Site as a whole supported diverse and continuous habitat, including woodland edges, scrub and grassland which are favoured by hedgehog. Furthermore, the Site borders extensive areas of gardens, cemeteries, allotments and grassland, which provide additional opportunities.

3.24 Grove Park Nature Reserve was considered especially suitable due to the presence of an extensive area of grassland adjacent to woodland, providing both foraging and sheltering opportunities. Nesting and hibernating opportunities were noted across the Site and included hedgerow bases and dense scrub.

3.25 Therefore, the Site was determined to be of high suitability for commuting, foraging, nesting and hibernating hedgehog.

3.26 The habitat appraisal for each site component is summarised below.

Hedgehog – Habitat Appraisal

Hither Green Station

- Commuting and Foraging Suitability: Low – Lack of suitable grassland for foraging.
- Nesting and Hibernating Suitability: High – Excellent for nesting and hibernating due to dense cover.

Hither Green Sidings

- Commuting and Foraging Suitability: Moderate – Some foraging opportunities present but grassland generally limited in extent.
- Nesting and Hibernating Suitability: High – Excellent for nesting and hibernating due to dense cover.

Grove Park Nature Reserve

- Commuting and Foraging Suitability: High – Excellent for foraging as supports extensive areas of grassland adjacent woodland.
- Nesting and Hibernating Suitability: High – Excellent for nesting and hibernating due to dense cover.

Cox's Wood

- Commuting and Foraging Suitability: High – Good for foraging as supports areas of grassland adjacent woodland.
- Nesting and Hibernating Suitability: High – Excellent for nesting and hibernating due to dense cover.

Reigate Road Open Space

- Commuting and Foraging Suitability: High – Excellent for foraging as supports extensive areas of grassland adjacent woodland.
- Nesting and Hibernating Suitability: High – Excellent for nesting and hibernating due to dense cover.

Breeding Birds

3.27 The Site as a whole supported diverse and continuous habitat, including woodland, scrub, grassland, ponds, streams, ditches and tall ruderal which provide opportunities for a variety of bird species. Furthermore, the Site forms an important semi-natural corridor.

3.28 The Site was found to provide suitable nesting and foraging habitat for a variety of common and widespread birds and species considered to be of nature conservation importance.

3.29 Therefore, the Site was determined to be of high suitability for commuting, foraging and nesting birds.

3.30 The habitat appraisal for each site component and bird species heard or seen, either perching or in flight across the Site recorded during the walkover is summarised below.

Birds – Habitat Appraisal **[See reference** 26**]**

Hither Green Station

- Birds Recorded During Site Walkover:
  - Red: Swift.
  - Amber: Wren and Woodpigeon.
  - Green: Chiff Chaff, Robin, Goldfinch and Great Spotted Woodpecker (nesting).
- Commuting and Foraging Suitability: High – Habitats diverse and continuous.
- Nesting Suitability: High – Dense undisturbed woodland and scrub provides excellent opportunities for nesting birds.

Hither Green Sidings (Network Rail)

- Birds Recorded During Site Walkover:
  - Red Listed: House Sparrow.
- Commuting and Foraging Suitability: High – Habitats diverse and continuous.
- Nesting Suitability: High – Dense undisturbed woodland and scrub provides excellent opportunities for nesting birds.

Hither Green Sidings (Willow Tree Riding Establishment)

- Birds Recorded During Site Walkover:
  - Amber: Kestrel and Song Thrush.

- Commuting and Foraging Suitability: High – Habitats diverse and continuous.
- Nesting Suitability: High – Dense undisturbed woodland and scrub provides excellent opportunities for nesting birds.

Grove Park Nature Reserve

- Birds Recorded During Site Walkover:
  - Red: Swift.
  - Amber: Song Thrush (breeding) and Wren.
  - Green: Chiff Chaff, Great Tit, Blue Tit, Wren, Chaffinch, Robin, Jay, Blackbird and Magpie.
- Commuting and Foraging Suitability: High – Habitats diverse and continuous.
- Nesting Suitability: High – Dense undisturbed woodland and scrub provides excellent opportunities for nesting birds.

Cox's Wood

- Birds Recorded During Site Walkover:
  - Red: Swift.
  - Green: Chiff Chaff and Goldcrest.
- Commuting and Foraging Suitability: High – Habitats diverse.
- Nesting Suitability: High – Dense undisturbed woodland and scrub provides excellent opportunities for nesting birds.

Reigate Road Open Space

- Birds Recorded During Site Walkover:
  - Red Listed: House Sparrow and Starling.
  - Amber: Dunnock.

  - Green: Blue Tit, Goldfinch and Blackbird.
- Commuting and Foraging Suitability: High – Habitats diverse and continuous.
- Nesting Suitability: High – Dense undisturbed woodland and scrub provides excellent opportunities for nesting birds.

Reptiles

3.31 The Site as a whole supported diverse and continuous habitat, including woodland, scrub, rough grassland, allotments, rail embankments, ponds, and urban wasteland which accumulatively provide excellent opportunities for reptiles, in particular, common lizard; *Zootoca vivipara*, slow worm; *Anguis fragilis* and grass snake; *Natrix helvetica*. Furthermore, the Site border extensive areas of gardens, cemeteries, allotments and grassland, which provide additional opportunities. No reptiles were recorded during the Site Walkover.

3.32 Anecdotal reports of common lizard at Grove Park Nature Reserve and Cox's Wood were provided by several members of the public and Lewisham Borough Council. Yellow meadow ant; *Lasius flavus* ant hills and reptile refugia were frequently stated as favoured basking spots. A single anecdotal report of grass snake and adder; *Vipera berus* was provided by a member of public from near the angling pond in Hither Green Sidings.

3.33 The Site also supported an abundance of potential refugia, including rubble piles, log piles, hedge/tree bases and dense scrub.

3.34 Therefore, the Site was determined to be of high suitability for commuting, foraging, basking and hibernating reptiles.

3.35 The habitat appraisal for each site component is summarised below.

Reptiles – Habitat Appraisal

Hither Green Station

- Commuting, Foraging and Basking Suitability: Moderate – Majority of site was heavily shaded by dense vegetation limiting basking opportunities. However, foraging and commuting opportunities were abundant.
- Hibernating Suitability: High – Good hibernating opportunities within tree and scrub roots.

Hither Green Sidings

- Commuting, Foraging and Basking Suitability: High – Diverse and continuous habitat, including woodland, scrub, rough grassland, allotments, rail embankments, pond and urban wasteland providing excellent commuting, foraging and basking opportunities.
- Hibernating Suitability: High – Good hibernating opportunities within tree roots, scrub roots and debris.

Grove Park Nature Reserve

- Commuting, Foraging and Basking Suitability: High – Rough grassland with scrub adjacent woodland on railway embankment provides excellent opportunities for reptiles. Woodland glades, ditches and ponds provide further opportunities.
- Hibernating Suitability: High – Good hibernating opportunities within tree and scrub roots.

Cox's Wood

- Commuting, Foraging and Basking Suitability: High – Woodland was relatively open providing opportunities for basking. Foraging and commuting opportunities abundant.
- Hibernating Suitability: High – Good hibernating opportunities within tree roots, scrub roots and debris.

Reigate Road Open Space

- Commuting, Foraging and Basking Suitability: High – Woodland was relatively open providing opportunities for basking. Grassland margins also suitable for basking. Foraging and commuting opportunities abundant.
- Hibernating Suitability: High – Good hibernating opportunities within tree and scrub roots.

Invertebrates

3.36 The Site as a whole supported diverse and continuous habitat, including woodland, scrub, rough grassland, allotments, rail embankments, ponds, and urban wasteland which provide opportunities for a variety of invertebrates. Furthermore, the Site border extensive areas of gardens, cemeteries, allotments and grassland, which provide further opportunities. No notable species were recorded during the Site Walkover.

3.37 Anecdotal reports of many common and widespread butterflies at Grove Park Nature Reserve were provided by several members of the public.

3.38 Therefore, the Site was determined to be of high suitability for commuting, foraging, basking and overwintering invertebrates.

3.39 The habitat appraisal for each site component is summarised below.

Invertebrates – Habitat Appraisal

Hither Green Station

- Commuting, Foraging and Basking Suitability: Moderate – Majority of site was heavily shaded by dense vegetation limiting basking opportunities. However, foraging opportunities were abundant, in particular for pollinators. Lacks areas of bare ground and extensive dead wood.

- Overwintering Suitability: High – Good overwintering opportunities within rough grassland and tall ruderal.

Hither Green Sidings

- Commuting, Foraging and Basking Suitability: High – Diverse and continuous habitat, including woodland, scrub, rough grassland, allotments, rail embankments, pond and urban wasteland providing excellent commuting, foraging and backing opportunities.
- Overwintering Suitability: High – Good overwintering opportunities within rough grassland and tall ruderal.

Grove Park Nature Reserve

- Commuting, Foraging and Basking Suitability: High – Species-rich grassland on railway embankment provides excellent opportunities for pollinators. Woodland glades, ditches and ponds provide further opportunities.
- Overwintering Suitability: High – Good overwintering opportunities within rough grassland, tall ruderal, dead wood and leaf litter.

Cox's Wood

- Commuting, Foraging and Basking Suitability: Moderate – Woodland was relatively open providing opportunities for basking. Foraging and commuting opportunities frequent but lacking in diversity. Lacks standing dead wood habitat.
- Overwintering Suitability: High – Good overwintering opportunities within tall ruderal and dead wood.

Reigate Road Open Space

- Commuting, Foraging and Basking Suitability: High – Woodland was relatively open providing opportunities for basking. Species-rich grassland provides excellent opportunities for pollinators. Standing dead wood could be more abundant.

- Overwintering Suitability: High – Good overwintering opportunities within rough grassland, tall ruderal and dead wood.

3.40 Consideration was also given to the suitability of the Site for any rare invertebrates noted during the desk study. A summary of species habitat requirements and commentary on the suitability of the Site is provided below.

Rare Invertebrates Species Appraisal

Chalcidi 'wasp'; *Brachymeria tibialis*

- Habitat Requirements: *Euproctis* sp., *Lymantria* sp. and *Zygaena* sp.
- Site Suitability: High – Site supports narrow-bordered five-spot burnet; *Zygaena lonicerae*.

Long-horned Bee; *Eucera longicornis*

- Habitat Requirements: Well-drained soils with sparse vegetation and flower-rich turf.
- Site Suitability: Moderate – Calcareous grassland at Grove Park Nature Reserve has well-drained soils and is flower rich but not sparse.

Stag Beetle; *Lucanus cervus*

- Habitat Requirements: Woodland, hedgerows and dead wood.
- Site Suitability: Moderate – Extensive woodland but relatively limited dead wood habitat.

Cinnabar (Moth); *Tyra jacobaeae*

- Habitat Requirements: Grassland, waste ground, railway banks, gardens and woodland rides where ragwort; *Senecio jacobaea* is prominent.
- Site Suitability: High – Extensive areas of all habitats and ragwort recorded.

Dark-barred Twin-spot Carpet (Moth); *Xanthorhoe ferrugata*

- Habitat Requirements: Found in range of habitats. Caterpillar feeds on various herbaceous plants including docks; *Rumex* sp., bedstraws; *Galium* sp. and ground-ivy; *Glechoma hederacea*.
- Site Suitability: High – Large range of habitats present and several species of dock noted.

White Ermine (Moth); *Spilosoma lubricipeda*

- Habitat Requirements: Gardens, hedgerows, grassland, heathland, moorland and woodland. Caterpillar feeds on a range of herbaceous plants including common nettle; *Urtica dioica* and docks.
- Site Suitability: High – Extensive hedgerows, grassland and woodland. Abundance of common nettle and several species of dock noted.

Brown Hairstreak; *Thecla betulae*

- Habitat Requirements: Hedges, scrub and woodland edge where blackthorn; *Prunus spinosa* is prominent.
- Site Suitability: Moderate – Extensive woodland edge and scrub. No blackthorn noted but likely present within dense areas of scrub.

Habitat Condition Assessment

3.41 A summary of the condition assessment is provided below. Full condition assessment proformas are provided within Appendix B.

Summary of Condition Assessments

Hither Green Station

- Pond: Moderate condition (Condition Proforma B.1).

- Semi-natural broadleaved woodland (south section): Poor condition (Condition Proforma B.2).
- Semi-natural broadleaved woodland (north section): Poor condition (Condition Proforma B.3).

Hither Green Sidings (Network Rail)

- Pond: Poor condition (Condition Proforma B.4).
- Semi-natural broadleaved woodland: Moderate condition (Condition Proforma B.5).

Hither Green Sidings (Willow Tree Riding Establishment)

- Semi-natural broadleaved woodland: Moderate condition (Condition Proforma B.6).

Grove Park Nature Reserve

- Pond: Moderate condition (Condition Proforma B.7).
- Semi-natural broadleaved woodland: Moderate condition (Condition Proforma B.8).
- Unimproved grassland: Good condition (Condition Proforma B.9).
- Dense scrub: Good condition (Condition Proforma B.10).

Cox's Wood

- Semi-natural broadleaved woodland: Moderate condition (Condition Proforma B.11).

Reigate Road Open Space

- Semi-natural broadleaved woodland: Poor condition (Condition Proforma B.12).
- Semi-improved neutral grassland: Good condition (Condition Proforma B.13).

Calcareous Grassland Assessment

3.42 The species composition of the grassland varied from north to south, with the northern area indicative of good quality semi-improved neutral grassland and the southern area grading into lowland unimproved calcareous grassland. The grassland was moderately species-rich throughout, with an average of ten species per 2m2, increasing to 14 species in the south. Grasses were dominant and therefore there is potential for species diversity and habitat condition to be increased through appropriate management. No rare or notable species were recorded.

3.43 Based on a combination of professional judgement and MAVIS analysis, the northern area of grassland (quadrats 1–4) was classified as most closely resembling MG1c *Arrhenatherum elatius* grassland, *Filipendula ulmaria* sub-community (MAVIS matching coefficient 48%).

3.44 The southern area of grassland (quadrats 5-8) was classified as most closely resembling MG1e *Arrhenatherum elatius* grassland, *Centaurea nigra* sub-community, with areas indicative of calcareous soils (MAVIS matching coefficient 43%). This grassland graded into CG4c *Brachypodium pinnatum* grassland, *Holcus lanatus* sub-community in areas where tor grass; *Brachypodium pinnatum*, sheep's fescue; *Festuca ovina*, and yellow oat-grass; *Trisetum flavescens*, became more dominant (MAVIS matching coefficient 39%).

3.45 A summary of the NVC survey is provided within Table 3.1 below.

Table 3.1: Grove Park Nature Reserve grassland NVC summary

Species	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Constancy	DOMIN Range
Yellow oat-grass; *Trisetum flavescens*	0	0	0	0	8	9	6	4	III	4-8
False oat-grass; *Arrhenatherum elatius*	8	3	7	6	5	2	5	1	V	1-8
Tall fescue; *Schedonorus arundinacea*	8	8	8	6	0	1	0	2	V	1-8
Cock's-foot; *Dactylis glomerata*	0	8	6	5	0	1	0	1	IV	1-8
Tor grass; *Brachypodium pinnatum*	0	0	0	0	0	0	0	7	I	7
Sheep's fescue; *Festuca ovina*	0	0	0	0	0	2	6	5	II	2-6
Sweet vernal-grass; *Anthoxanthum odoratum*	0	0	0	0	0	3	6	3	II	3-6
Meadow vetchling; *Lathyrus pratensis*	6	6	6	5	6	5	4	4	V	4-5
Common hogweed; *Heracleum sphondylium*	1	0	0	6	0	0	0	0	II	1-6
Meadow foxtail; *Alopecurus pratensis*	5	4	5	2	0	0	0	0	III	2-5
Rough meadow-grass; *Poa trivialis*	4	4	5	3	3	0	0	0	IV	3-5
Common vetch; *Vicia sativa* ssp. *segetalis*	1	5	2	2	0	1	0	0	IV	1-5
Common bird's-foot trefoil; *Lotus corniculatus*	0	0	0	0	0	4	5	3	II	3-5

Species	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Constancy	DOMIN Range
Smooth tare; *Vicia tetrasperma*	0	5	0	0	1	2	0	0	II	1-5
Red clover; *Trifolium pratense*	0	0	5	1	0	0	1	0	II	1-5
Tufted vetch; *Vicia cracca*	3	1	2	1	4	4	3	1	V	1-4
Yorkshire fog; *Holcus lanatus*	3	5	2	0	0	0	1	0	III	1-5
Common knapweed; *Centaurea nigra*	0	0	0	0	0	0	3	3	II	3
Agrimony; *Agrimonia eupatoria*	2	0	0	0	0	0	2	3	II	2-3
Common dog violet; *Viola riviana*	0	0	0	0	0	0	3	3	II	3
Common sorrel; *Rumex acetosa*	0	2	0	0	0	0	0	0	I	2
Creeping cinquefoil; *Potentilla reptans*	0	0	0	0	0	0	1	1	II	1
Dandelion; *Taraxacum* agg.	2	0	0	0	0	0	0	0	I	2
Bramble; *Rubus fruticosus* agg.	0	1	0	1	0	0	0	0	II	1
Cleavers; *Galium aparine*	0	0	1	0	0	0	0	0	I	1
Species Richness	11	12	11	11	6	11	13	14	N/A	N/A

Note: Quadrants are ordered from north (Q1) to south (Q8). Grid references for the quadrants are provided in Appendix C.

Wet Woodland Assessment

3.46 The wet woodland was dominated by white willow; *Salix alba*, with locally frequent goat willow; *Salix caprea* and crack willow; *Salix fragilis*, occasional grey willow; *Salix cinerea*, elm; *Ulmus* sp, and ash; *Fraxinus excelsior*. The ground flora comprised locally dominant nettle; *Urtica dioica*, with abundant cow parsley; *Anthriscus sylvestris* and cleavers; *Galium aparine*, locally abundant great willowherb; *Epilobium hirsutum* and occasional soft rush; *Juncus effusus*. The water table was high, with damp ground, small areas of standing water and with some more open areas grading into marginal vegetation communities, which comprised locally abundant pendulous sedge; *Carex pendula*, greater pond sedge; *Carex riparia*, yellow iris; *Iris pseudacorus* and great willowherb. None of these species are considered rare or notable species.

3.47 This tree species composition did not fit closely to any NVC habitat types, however, based on the species present and the high water table, the habitat is considered to be wet woodland, which is a UK Biodiversity Action Plan Priority Habitat. However, it should be noted that the woodland was small in size (up to 0.2 ha) and did not represent a good quality example of this habitat. Immediately to the south of the wet woodland, was a pond, created by a make-shift dam, which reduced the inundation of the woodland. Therefore, there is potential to increase the quality and extent of the wet woodland habitat by removing the dam and allowing water levels to fluctuate naturally. This enhancement could be combined with the creation of a new pond in an area of open habitat further to the south to replace the one that would be lost by the removal of the dam.

Nocturnal Bat Activity Surveys – Static Monitoring

3.48 Surveys found low levels of bat activity at both static monitoring points. Common pipistrelle was the most frequently recorded species, accounting for 92.6% of the total calls. Noctule; *Nyctalus noctula*/Serotine; *Eptesicus serotinus*/Leisler's *Nyctalus leisleri* and *Pipistrellus* sp. both comprised 3.7% of total bat passes. All species recorded were common and widespread.

3.49 Table 3.2 summaries the species which were recorded during static monitoring surveys across both of the SMPs.

Table 3.2: Species composition recorded during static monitoring surveys

Bat Species/Group	Total Bat Passes	Percentage of Total Bat Passes
Common Pipistrelle	25	92.6%
Pipistrellus sp.	1	3.7%
Noctule/Serotine/Leisler's	1	3.7%

Camera Trapping

3.50 Fox were recorded on video and photo stills at CT A and CT B and are thought to widely use the Site to shelter, forage and breed.

3.51 No other mammals were recorded using the Site.

Chapter 4
Discussion

Habitat Appraisal

Strategic Significance

4.1 None of the habitats recorded were considered significant at a London level alone or in combination. Most habitats are common and widespread throughout London and were generally not in favourable condition. Whilst wet woodland and unimproved calcareous grassland are rare in London, the extent of these habitat was very limited and therefore insignificant at the London level. No rare or notable plant species were recorded. Whilst there are records of strawberry clover; *Trifolium fragiferum* within the calcareous grassland at Grove Park Nature Reserve, the plant was not recorded during the calcareous grassland assessment suggesting it was scarce, or absent.

4.2 Nevertheless, the Site is considered to represent a strategic ecological corridor helping to connect inner city London to be the wider country side. This corridor supports a rich mosaic of habitats and is likely to important for commuting and dispersing by range of species including, bats, hedgehog, birds, reptiles and invertebrates.

Species Appraisal

4.3 The species appraisal determined that the Site is of:

- High suitability for commuting and foraging bats;
- Low to moderate suitability for roosting bats;

- High suitability for commuting, foraging, nesting and hibernating hedgehog;
- High suitability for commuting, foraging and nesting birds;
- High suitability for commuting, foraging, basking and hibernating reptiles; and
- High suitability for commuting, foraging, basking and overwintering invertebrates.

4.4 Recommendations are made in the Enhancement section below to increase the suitability of the Site for roosting bats.

Strategic Significance

4.5 None of the species or species group recorded during the Site Walkover or during the desk study were considered significant at a London level alone or in combination. Whilst there is evidence that the Site supports some rare and unusual species, there is no evidence to suggest these populations represent a significant proportion of the London population.

Current Habitat Condition

4.6 The habitat condition assessment determined that:

- 23.0% of the habitats assessed were in Good condition;
- 46,2% of the habitats assessed were in Moderate condition; and
- 30.8% of the habitats assessed were in Poor condition.

Therefore, there are significant opportunities to enhance the Site.

Enhancements

Hither Green Station

- Desilting of pond to improve water quality.
- Control of Japanese knotweed and buddleia; *Buddleja davidii*.
- Selective thinning of sycamore to create open space within woodland. This will create opportunities for native tree and shrub species to regenerate, whilst also creating basking opportunities for reptiles and invertebrates.
- Veteranisation of selected sycamore trees during the selective thinning discussed above. This will create dead wood habitat benefiting a range of species. Options for veteranisation could include: nest box, woodpecker hole, horse damage to trunk, broken branch and ring-barked branch **[See reference** 27**]**.
- Creation of dead wood habitat, such as log piles and loggeries. This should be done with arisings from the selective tree clearance works. These habitats will benefit a range of species, in particular invertebrates.
- Selective clearance of areas locally dominated by undesirable species, such as common nettle, green alkanet; *Pentaglottis sempervirens* and hogweed; *Heracleum sphondylium*. This will create opportunities for ground flora to diversify.
- Creation of more ground for basking reptiles, invertebrates and herbaceous plants.
- Installation of artificial bumble bee nest features (woodcrete). This will provide long term nesting opportunities for bumblebees.
- Installation of bat boxes onto mature trees (Schwegler 2F or similar). This will provide long term roosting opportunities for a variety bats species.
- Installation of bird boxes onto mature trees (woodcrete). This will provide long term roosting opportunities for a variety bird species.

- Selective clearance of vegetation along the stream to increase light levels encouraging growth of aquatic plants.
- Re-naturalisation of stream through excavating deeper and shallower sections.
- Installation of kingfisher tunnels into stream bank.
- Creation of a bird hide which can be accessed from Hither Green Station to provide passengers with the opportunity to engage with nature whilst at the train station. This would increase public access to the Hither Green Station whilst avoiding disturbance to birds.

Hither Green Sidings

- The non-native fish should be removed from the pond and the pond restored for wildlife benefit. It is also recommended that a dedicated angling pond is created, as there is clearly a local desire for such a site. Any new angling ponds should be publicly accessible.
- The pond dam should be altered, to allow water ingress into the existing wet woodland.
- Selective thinning of trees to create open space within woodland. This will create opportunities for native tree and shrub species to regenerate, whilst also creating basking opportunities for reptiles and invertebrates.
- Creation of more dead wood habitat, such as log piles and loggeries. This should be done with arising from the selective tree clearance works. These habitats will benefit a range of species, in particular invertebrates.
- Control of Japanese knotweed.

Grove Park Nature Reserve

- Control of duckweed and snowberry.

- Selective thinning of ash to create open space within woodland. This will create opportunities for native tree and shrub species to regenerate, whilst also creating basking opportunities for reptiles and invertebrates.
- Veteranisation of selected ash trees during the selective thinning discussed above. This will create more dead wood habitat benefiting a range of species. Options for veteranisation could include: nest box, woodpecker hole, horse damage to trunk, broken branch and ring-barked branch **[See reference** 28**]**.
- Manage woodland glades as meadows to increase species diversity and opportunities for other species, including bats, reptiles, birds and invertebrates.
- Installation of artificial bumble bee nest features (woodcrete). This will provide long term nesting opportunities for bumblebees.
- Installation of bat boxes onto mature trees (Schwegler 2F or similar). This will provide long term roosting opportunities for a variety bats species.
- Installation of bird boxes onto mature trees (woodcrete). This will provide long term roosting opportunities for a variety bird species.
- Create a permeant pond at former anti-aircraft depression. The topography favours pond creation and will greatly complement the existing woodland pond.
- Consider use of chain harrow or peripatetic grazing within meadow areas. This would reduce the dominance of tall grasses and provide more opportunity for wildflowers, including those that thrive in calcareous soils.
- Rotational cutting regime of dense scrub to diversify structure and create ages classes.

Cox's Wood

- Selective thinning of ash to create open space within woodland. This will create opportunities for native tree and shrub species to regenerate, whilst also creating basking opportunities for reptiles and invertebrates.

- Veteranisation of selected ash trees during the selective thinning discussed above. This will create more dead wood habitat benefiting a range of species. Options for veteranisation could include: nest box, woodpecker hole, horse damage to trunk, broken branch and ring-barked branch **[See reference** 29**]**.
- Creation of more dead wood habitat, such as log piles and loggeries. This should be done with arising from the selective tree clearance works. These habitats will benefit a range of species, in particular invertebrates.
- Installation of bat boxes onto mature trees (Schwegler 2F or similar). This will provide long term roosting opportunities for a variety of bats species.
- Installation of bird boxes onto mature trees (woodcrete). This will provide long term roosting opportunities for a variety bird species.

Reigate Road Open Space

- Selective thinning of ash to create open space within woodland. This will create opportunities for native tree and shrub species to regenerate, whilst also creating basking opportunities for reptiles and invertebrates.
- Veteranisation of selected ash trees during the selective thinning discussed above. This will create more dead wood habitat benefiting a range of species. Options for veteranisation could include: nest box, woodpecker hole, horse damage to trunk, broken branch and ring-barked branch **[See reference** 30**]**.
- Creation of more dead wood habitat, such as log piles and loggeries. This should be done with arising from the selective tree clearance works. These habitats will benefit a range of species, in particular invertebrates.
- Installation of bat boxes onto mature trees (Schwegler 2F or similar). This will provide long term roosting opportunities for a variety bats species.
- Installation of bird boxes onto mature trees (woodcrete). This will provide long term roosting opportunities for a variety bird species.
- Creational of formal recreational route to reduce recreational damage and improve access to the Site.

- Continue managing semi-improved neutral grassland as a hay meadow (annual cut removing arisings). This will increase species diversity over time.
- Control Japanese knotweed.

Green Corridors

- Explore options for creating a green bridge over the railway line between Grove Park Nature Reserve and Reigate Open Space. This could either be through constructing a new bridge or through modifications to the existing bridge. The bridge could also incorporate educational boards or QR code points highlighting the cultural and ecological importance of the area.
- Explore options for adding green roofs or walls to existing buildings to create stepping stones for wildlife. This should be focused where the component sites lack strong connectivity, such as between Hither Green Sidings and Grove Park Nature Reserve.
- Explore options for implementing a ‘hedgehog highway’ scheme within residential gardens near to the Site. This could comprise working with an established charity to help the local community retrofit hedgehog holes to garden fencing.

Consideration for Metropolitan SINC Status

4.7 An assessment was made to determine if the Site could meet the criteria for Metropolitan SINC status. This is summarised below **[See reference** 31**]**.

Criteria 1: Representation

- The best examples of London’s habitats.

- Assessment of Whether the Site Meets the Criteria: No the Site does not meet this criteria.
- Reasoning: None of the habitats recorded are considered the best examples of London's habitats.

Criteria 2: Habitat Rarity

- Those habitats that are particularly rare in London may have all or most of their examples selected as SMI.
- Assessment of Whether the Site Meets the Criteria: Yes the Site does meet this criteria.
- Reasoning: Wet woodland and unimproved calcareous grassland are rare in London.

Criteria 3: Species Rarity

- Contain particularly rare species or rare assemblages of species (nationally scarce or rare (including Red Data Book species) and species which are rare in London).
- Assessment of Whether the Site Meets the Criteria: Yes the Site does meet this criteria.
- Reasoning: Rare species recorded within the Site include strawberry clover, chalcidid 'wasp'; *Brachymeria tibialis*, long-horned bee; *Eucera lonicornis*, stag beetle, cinnabar, dark-barred twin-spot carpet, white ermine, brown hairstreak, swift, starling, black redstart, house sparrow, hedgehog and common lizard.

Criteria 4: Habitat Richness

- Supports a rich selection of habitat types in a London context.

- Assessment of Whether the Site Meets the Criteria: Yes the Site does meet this criteria.
- Reasoning: The Site supports a rich mosaic of habitats including calcareous grassland, semi-natural broadleaved woodland, wet woodland, pond, scattered trees, scrub, tall ruderal, wet ditches, running water, semi-improved neutral grassland, bare ground, amenity grassland and hedgerow.

Criteria 5: Species Richness

- Supports a rich selection of species types in a London context.
- Assessment of Whether the Site Meets the Criteria: Yes the Site does meet this criteria.
- Reasoning: As detailed above, the Site supports a rich mosaic of habitats which in turn support a high species richness.

Criteria 6: Size

- Supports a significant proportion of London's wildlife; has less disturbance; supports species with larger area requirements.
- Assessment of Whether the Site Meets the Criteria: Maybe the Site might meet this criteria.
- Reasoning: The Site is unlikely to support a significant proportion of London's wildlife. However, the Site does have a very limited disturbance in areas and could support species with large area requirements.

Criteria 7: Important Populations of Species

- Holds a large proportion of the population of a species for London.
- Assessment of Whether the Site Meets the Criteria: Maybe the Site might meet this criteria.

- Reasoning: The chalcidid ‘wasp’; *Brachymeria tibialis* recorded in 2007 was new to Britain at the time. There has been only one further record in London since then. However, due to the under recorded nature of chalcidid wasps, it is difficult to determine if this species is more widespread throughout London. There is no robust data to suggest the Site supports a large proportion of the population of any other species for London.

Criteria 8: Ancient Character

- Long continuity current character (ancient woodland, old parkland trees, traditionally managed grasslands etc.).
- Assessment of Whether the Site Meets the Criteria: No the Site does not meet this criteria.
- Reasoning: No ancient character noted.

Criteria 9: Recreatability

- If lost, something would be lost which exists in a very few other places in London.
- Assessment of Whether the Site Meets the Criteria: Yes the Site does meet this criteria.
- Reasoning: Undeveloped large railway cuttings are rare in a London context. Furthermore, it would be very difficult to recreate the calcareous grassland and wet woodland habitats.

Criteria 10: Typical Urban Character

- In urban areas also includes various types of abandoned land colonised by nature (“wasteland or brownfield”).
- Assessment of Whether the Site Meets the Criteria: Yes the Site does meet this criteria.

- Reasoning: The majority of the Site could be described “brownfield” due to its previously used nature. Some areas are more typically brownfield whereas others have succeeded into more natural habitats.

Criteria 11: Cultural or Historic Character

- Has a blend of cultural/historic and natural history (historic gardens, old churchyards, Victorian cemeteries).
- Assessment of Whether the Site Meets the Criteria: Maybe Reasoning: Grove Park Nature Reserve and the surrounding area is believed to have inspired Edith Nesbit’s ‘The Railway Children’. Parts of Grove Park Nature Reserve and Cox’s Wood are thought to have once been a part of Edith’s home the “Three Gables”. The Site also borders an extensive Victorian cemetery (Hither Green Cemetery). Desmond Tutu also lived locally and the peace pole in Grove Park Nature Reserve links to the Peace Garden in Chinbrook Meadows. Important military bases were also located across the Site during the first and second world wars. The heritage of Grove Park and the surrounding areas is summarised in a Heritage Trail Map by the Baring Trust **[See reference** 32**]**. However, the Site does not contain the national heritage designations from Historic England.

Criteria 12: Geographic Position

- Site is located within Areas of Deficiency (AOD).
- Assessment of Whether the Site Meets the Criteria: No the Site does not meet this criteria.
- Reasoning: Site is not located within AOD.

Criteria 13: Access

- Provides opportunities for people to have contact with the natural environment.

- Assessment of Whether the Site Meets the Criteria: Yes the Site does meet this criteria.
- Reasoning: Grove Park Nature Reserve and Reigate Road Open Space have full public access. Cox's Wood is not open to the public but is a busy community centre. Hither Green Station is open occasionally throughout the year to volunteers. Hither Green Sidings is not open to the public but has regular unofficial use by the public.

Criteria 14: Use

- Its established use and that importance (education, research, quiet enjoyment of nature).
- Assessment of Whether the Site Meets the Criteria: Yes the Site does meet this criteria.
- Reasoning: Cox's Wood is very important as a local centre for education and research. They host several events including nature club for children, food growing workshops, astrology evenings (it has one of the only dark sky discovery sites in London) and literacy programmes. Grove Park Nature Reserve has an educational trail including QR points teaching about the Sites ecological value and heritage. It is also used by many for the quiet enjoyment of nature.

Criteria 15: Potential

- Can be enhanced with modest changes in management; has considerable local conservation enthusiasm; may become valuable for nature conservation use.
- Assessment of Whether the Site Meets the Criteria: Yes the Site does meet this criteria.
- Reasoning: The Site undoubtedly has high potential for enhancement and has a highly enthusiastic local community including Ringway Community Centre. Enhancement options are detailed in full within the Enhancement section above. There is also ambition for the creation of the Railway

Children District Park, which is set out in the Grove Park Neighbourhood Plan.

Criteria 16: Aesthetic Appeal

- Contributes to the enjoyment of the experience of visiting a site, as seclusion, views, variety of landscape and habitat structure, colour and natural sounds and scents.
- Assessment of Whether the Site Meets the Criteria: Maybe the Site might meet this criteria.
- Reasoning: The views from Grove Park Nature Reserve are quite iconic in having likely inspired ‘The Railway Children’. Grove Park Nature Reserve, Hither Green Station, Hither Green Sidings and Cox’s Wood all feel secluded form the busy urban habitat surrounding the Site. Woodland across the Site lacked strong aesthetic appeal due to a lack of veteran trees and limited ground flora (due to shading).

Criteria 17: Geodiversity Interest

- Has a geological interest which has educational, scientific, historical or aesthetic value.
- Assessment of Whether the Site Meets the Criteria: No the Site does not meet this criteria.
- Reasoning: No known geodiversity interest.

4.8 The Site is considered to meet 9 of the 17 criteria with a further four criteria listed as ‘maybe’. Maybes were given where there was lack of robust data or where the criteria was highly subjective. Therefore, between 9 (53%) and 13 (76%) of the 17 criteria are considered to be met.

Given the majority of the criteria have been met, it could be argued that the Site warrants Metropolitan SINC status. However, it is LUC's professional opinion that the Site does not warrant Metropolitan SINC status at this time.

4.9 This is reasoned predominantly due to the current condition of the habitats across the Site and the lack of robust evidence to suggest the Site is significant for any species or species group. It is noted that this opinion is subjective.

4.10 The argument for Metropolitan SINC status could be strengthened by the preparation of a strategy for biodiversity improvement to the Site. The Council's strategy will comprise this Study and The Grove Park Neighbourhood Plan:

- This Study indicates how off-site Biodiversity Net Gain can be delivered across the Site strategically and meaningfully; and
- The Grove Park Neighbourhood Plan includes the 'Railway Children District Park' with significant biodiversity improvements.

Comparison to M122: Forest Hill to New Cross Gate Railway Cutting

4.11 There is currently only one railway siding SINC of Metropolitan status, M122: Forest Hill to New Cross Gate Railway Cutting. The two sites are very similar with the key differences being:

- Forest Hill to New Cross Gate Railway Cutting is larger than the Site (approximately 1.5 times as large); and
- Forest Hill to New Cross Gate Railway Cutting is only accessible to the public on limited days.

4.12 This similarities between these two sites could strengthen the argument in favour of awarding the Site Metropolitan SINC status. A full comparison between this SINC and the Site is shown below.

Summary

Forest Hill to New Cross Gate Railway Cutting

- Probably the finest selection of railside habitats in London, this wide cutting combines four nature reserves, containing woodland, scrub, grassland and reed beds.

Hither Green to Grove Park Corridor

- Various habitats including substantial area of calcareous grassland.

Area (hectares)

Forest Hill to New Cross Gate Railway Cutting

- 37.49ha

Hither Green to Grove Park Corridor

- 25.04ha

Habitat(s)

Forest Hill to New Cross Gate Railway Cutting

- Ancient woodland, acid grassland, pond/lake, reed bed, scrub, secondary woodland, semi-improved neutral grassland and tall herbs.

Hither Green to Grove Park Corridor

- Chalk grassland, pond/lake, scattered trees, scrub, secondary woodland, semi-improved neutral grassland, tall herbs, wet ditches, running water, bare ground, amenity grassland and hedgerow.

Site Description

Forest Hill to New Cross Gate Railway Cutting

- An extensive railway cutting between New Cross Gate and Forest Hill stations, in a strongly urban area of south London.
- The most representative site in London for habitats developing on active railsides, it also demonstrates well their important role in allowing natural vegetation to develop in the heart of the inner city. The site is unusual however, in containing four nature reserves that allow access to a large section of the cutting.
- The woodland is dominated by sycamore and ash, with some birch. Several locally uncommon ground flora plants include bitter-vetch, ramsons, and goldenrod. Open grassy habitats indicate a wide range of underlying soil conditions. More neutral grassland supports the London rarities common restharrow and common centaury.
- The breeding avifauna includes tawny owl, lesser spotted woodpecker and bullfinch.

- A surprisingly diverse invertebrate fauna includes several nationally scarce species, amongst which is the white-letter hairstreak butterfly.

Hither Green to Grove Park Corridor

- An extensive railway cutting between Hither Green and Grove Park stations, in a strongly urban area of south London.
- Arguably, the second most representative site in London for habitats developing on active railsides. The site also demonstrates the importance of natural vegetation to develop in the heart of the inner city. The site also allows access to large sections of the cutting including a publicly accessible nature reserve (Grove Park Nature Reserve) and park (Reigate Road Open Space). Other areas are accessible by invitation only (Hither Green Station and Cox's Wood).
- Woodland assessed in distinct parcel but canopy species included sycamore, oak, ash, cherry, goat willow, silver birch, horse chestnut and aspen. No uncommon ground flora were noted.
- Breeding avifauna includes song thrush, great spotted woodpecker, blackcap, whitethroat and lesser whitethroat.
- The site supports diverse inveterate fauna including yellow meadow-ants, chalcidid ‘wasp’; *Brachymeria tibialis*, long-horned bee; *Eucera longicornis*, stag beetle, cinnabar, dark-barred twin-spot carpet, white ermine, brown hairstreak and white-letter hairstreak.
- Also supports common lizard populations and has records of hedgehog.

Chapter 5

Conclusions and Recommendations

Conclusions

Habitats

5.1 The Site supports six London BAP Priority Habitats including:

- Woodland;
- Chalk grassland;
- Rivers & streams;
- Standing water;
- Parks & urban green spaces; and
- Open mosaic habitat.

5.2 Woodland was the largest component, all of which was in Poor to Moderate condition. Only 23% of habitats were in Good condition demonstrating the need for improved management across the Site.

5.3 The most notable habitats were wet woodland and unimproved calcareous grassland which were in Moderate and Good condition respectively. Both habitats were limited in extent.

No habitats were considered significant at the London level alone or in-combination. However, if the proposed strategy for biodiversity improvement is successful, the habitats may become important at the London level.

Species

5.4 The Site also supports 14 rare (rare species include those that are nationally scarce or rare (including Red Data Book species) and species which are rare in London) species including:

- Strawberry clover (Red List – Great Britain – Vulnerable);
- Chalcidid ‘wasp’; *Brachymeria tibialis* (one of five records in UK);
- Long-horned bee; *Eucera longicornis* (UK Priority Species, Nationally Notable A);
- Cinnabar (UK Priority Species);
- Dark-barred twin-spot carpet (UK Priority Species);
- White ermine (UK Priority Species);
- Stag beetle (London Priority Species, Nationally Notable B);
- Brown hairstreak (Nationally Scarce);
- Swift (Red listed);
- Starling (Red listed);
- House sparrow (Red listed);
- Black redstart (Amber listed);
- Hedgehog (London Priority Species, Local Species of Conservation Concern, Red List – Great Britain – Vulnerable); and

- Common lizard (London Priority Species, Local Species of Conservation Concern).

5.5 The Site was considered suitable for all of the above species, in addition to other notable species and species groups.

There is a lack of robust evidence to suggest that the Site is significant at the London level for any species or species group either alone or in-combination. However, if the proposed strategy for biodiversity improvement is successful, it may possible to evidence importance at the London level.

5.6 Robust evidence could comprise proving that the Site holds a large proportion of the population of a species for London. For example 5% of London's long-horned bee population. It is noted that the chalcidid 'wasp'; *Brachymeria tibialis* recorded in 2007 was new to Britain at the time and there has been only one further record in London since then. Arguably this constitute to 50% of London's population. However, due to the under recorded nature of chalcidoid wasps, it is difficult determine if this species is more widespread throughout London.

Recommendations

5.7 Considering the evidence presented the following recommendations are proposed:

- All component sites should retain their current SINC status.
- Lewisham Borough Council should progress the strategy for biodiversity improvement across the component sites they manage. Management objectives should be informed by the enhancements recommended within this report.

- Hither Green to Grove Park Corridor should be reconsidered for Metropolitan status once the strategy for biodiversity improvement has resulted in significant improvements to the Site. Significant improvements could be demonstrated through a repeat of this survey in the future.
- Regular monitoring of the Site should be undertaken to determine:
  - Habitat condition changes (i.e. are the management plans working); and
  - Rare and notable species records.
- Once habitat conditions improve Lewisham Borough Council should consider commissioning detailed surveys of target species groups (bats, breeding birds, invertebrate and botanical). At present, these surveys are unlikely to yield any novel data.

Appendix A

Site Walkover Mapping and Target Notes

Target Notes

TN1: Semi-natural broadleaved woodland (A1.1). Canopy comprised abundant sycamore; *Acer pseudoplatanus* with frequent oak; *Quercus* sp. and occasional cherry; *Prunus* sp. and silver birch; *Betula pendula*. Shrub layer comprised occasional oak, holly; *Ilex aquifolium*, sycamore; *Acer pseudoplatanus*, hawthorn; *Crataegus monogyna* and buddleia; *Buddleja davidii*. Ground flora comprised abundant common nettle; *Urtica dioica* with occasional cleavers; *Galium aparine*, fern; *Polypodiopsida* sp., willowherb; *Epilobium* sp. and rarely cow parsley; *Anthriscus sylvestris*, wood avens; *Geum urbanum*, hart's tongue fern; *Asplenium scolopendrium*, redcurrant; *Ribes rubrum*, hogweed; *Heracleum sphondylium* and green alkanet; *Pentaglottis sempervirens*.

TN2: Semi-natural broadleaved woodland (A1.1). Canopy dominated by sycamore. Shrub layer included occasional elder; *Sambucus nigra* and Japanese knotweed; *Fallopia japonica*. Ground flora included frequent bindweed; *Calystegia sepium*, common nettle, willowherb with rarely hedge garlic; *Alliaria petiolata* and creeping buttercup; *Ranunculus repens*.

TN3: Standing open water (G1). Small woodland pond bound by marginal vegetation including Japanese knotweed.

TN4: Fox den.

TN5: Area of tall ruderal (C3.1) and semi-improved neutral grassland (B2.2). Frequent hogweed, bramble; *Rubus fruticosus* agg., common vetch; *Vicia*

sativa, broad-leaved dock; *Rumex obtusifolius*, herb-robert; *Geranium robertianum*, willowherb, buddleia, sycamore and cock's foot; *Dactylis glomerata*.

TN6: Allotment.

TN7: No access. Surveyed from adjacent land only. Semi-natural broadleaved woodland (A1.1). Canopy comprised abundant willow; *Salix* sp., frequent cherry, sycamore, oak and goat willow; *Salix caprea*. Japanese knotweed occasionally noted in shrub layer.

TN8: Semi-natural broadleaved woodland (A1.1). Dominated by white willow; *Salix alba*, with locally frequent goat willow and crack willow; *Salix fragilis*, occasional grey willow; *Salix cinerea*, elm; *Ulmus* sp, and ash; *Fraxinus excelsior*. The ground flora comprised locally dominant nettle, with abundant cow parsley; *Anthriscus sylvestris* and cleavers, locally abundant great willowherb; *Epilobium hirsutum* and occasional soft rush; *Juncus effusus*.

TN9: Standing open water (G1). Small pond used for recreational angling.

TN10: Dense scrub (A2.1) dominated by bramble with occasional bindweed.

TN11: Semi-improved neutral grassland (B2.2) grading into unimproved calcareous grassland (B3.1). Subject to NVC survey. See calcareous grassland assessment for full species lists.

TN12: Anti-aircraft depression. Opportunity for pond creation.

TN13: Semi-natural broadleaved woodland (A1.1). Canopy comprised abundant oak and ash with occasional horse chestnut; *Aesculus hippocastanum*. Scrub comprised frequent hawthorn, snowberry; *Symphoricarpos albus* and bramble, occasional holly and elder, with rarely gorse; *Ulex europaeus*, yew; *Taxus baccata*, field maple; *Acer campestre* and sycamore. Ground flora was dominated by ivy; *Hedera helix* with frequent bluebell; *Hyacinthoides non-*

scripta, cock's foot, cow parsley and green alkanet. False oat grass; *Arrhenatherum elatius*, hedge garlic, creeping bent; *Agrostis stolonifera*, curled dock; *Rumex crispus*, pendulous sedge; *Carex pendula* and herb-robert were rarely noted.

TN14: Standing open water (G1). Small woodland pond with 100% duckweed cover.

TN15: No access. Surveyed from adjacent land only. Dense scrub (A2.1). Species comprised frequent willow, hawthorn, bramble with occasional oak and cherry. Sycamore, birch; *Betula* sp. and ash were rarely noted. Common vetch, cock's foot, creeping buttercup and pendulous sedge were also rarely noted within clear areas.

TN16: Semi-natural broadleaved woodland (A1.1). Continuation of woodland at Grove Park Nature Reserve with high abundance of ash.

TN17: Semi-improved neutral grassland (B2.2). Recently planted with meadow mix (2020). Dominated by crested dog's tail; *Cynosurus cristatus*, occasional common bird's-foot-trefoil; *Lotus corniculatus*, oxeye daisy; *Leucanthemum vulgare*, yarrow; *Achillea millefolium* and ribwort plantain; *Plantago lanceolata* with rarely red clover; *Trifolium pratense*, common vetch and white clover; *Trifolium repens*.

TN18: Semi-natural broadleaved woodland (A1.1). Canopy comprised frequent ash and sycamore with occasional aspen; *Populus tremula*. Scrub comprised occasional elder, hawthorn and bramble. Ground flora was dominated by ivy with rarely bindweed.

TN19: Railway footbridge. Opportunity to create green bridge.

Hither Green to Grove Park Corridor: Establishing Metropolitan SINC Status
for London Borough of Lewisham

LUC

Figure A.1: Site Walkover Mapping

- Target note
- No access. Surveyed from adjacent land only

Equipment

- Anabat Express
- Camera trap

Invasive species

- Japanese knotweed

SINC

- Grove Park Nature Reserve: Borough Grade
- Hither Green Sidings: Borough Grade
- Hither Green Station: Borough Grade
- Reigate Road Open Space: Borough Grade
- Cox's Wood: *potential* SINC

0 250 500 Metres

Map scale 1:11,000 @ A3

CB:AHB EB:Hardie-Brown_A LUC FIGA1_11752_r0_SiteWalkover_A3L 31/08/2022
Source:LBL, LUC

Hither Green to Grove Park Corridor: Establishing Metropolitan SINC Status
for London Borough of Lewisham

LUC

Figure A.2: Site Walkover Mapping (Grove Park Nature Reserve)

- Target note
- No access. Surveyed from adjacent land only

Equipment

- Anabat Express
- Camera trap

Invasive species

- Japanese knotweed

SINC

- Grove Park Nature Reserve: Borough Grade
- Hither Green Sidings: Borough Grade
- Reigate Road Open Space: Borough Grade
- Cox's Wood: *potential* SINC

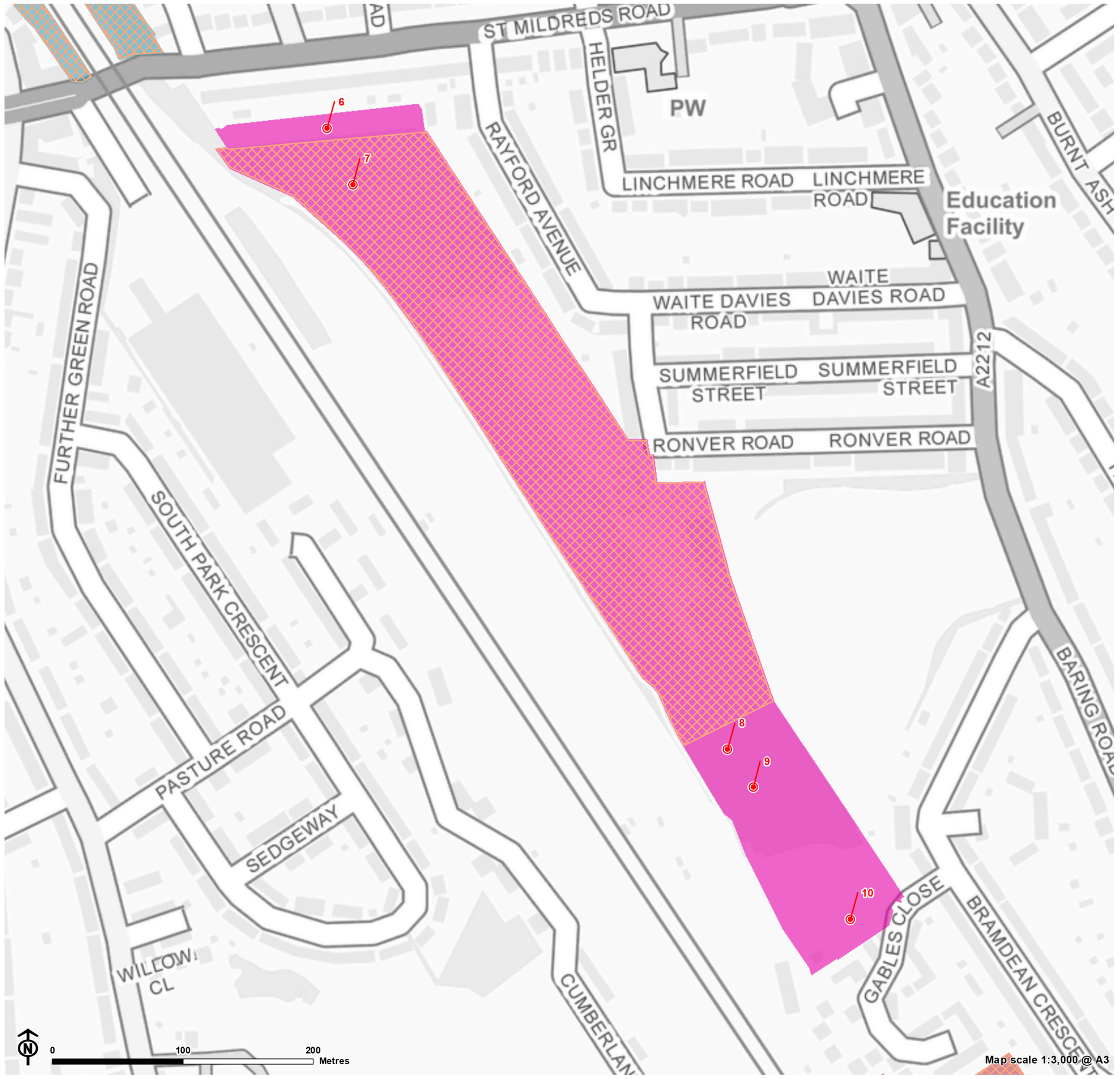
Map scale 1:3,000 @ A3

CB:AHB EB:Hardie-Brown_A LUC FIGA2_11752_r0_SiteWalkoverDDP_A3L 31/08/2022
Source:LBL, LUC

Hither Green to Grove Park Corridor: Establishing Metropolitan SINC Status
for London Borough of Lewisham

LUC

Figure A.3: Site Walkover Mapping (Hither Green Sidings)



Target note

No access. Surveyed from adjacent land only

SINC

Grove Park Nature Reserve: Borough Grade

Hither Green Sidings: Borough Grade

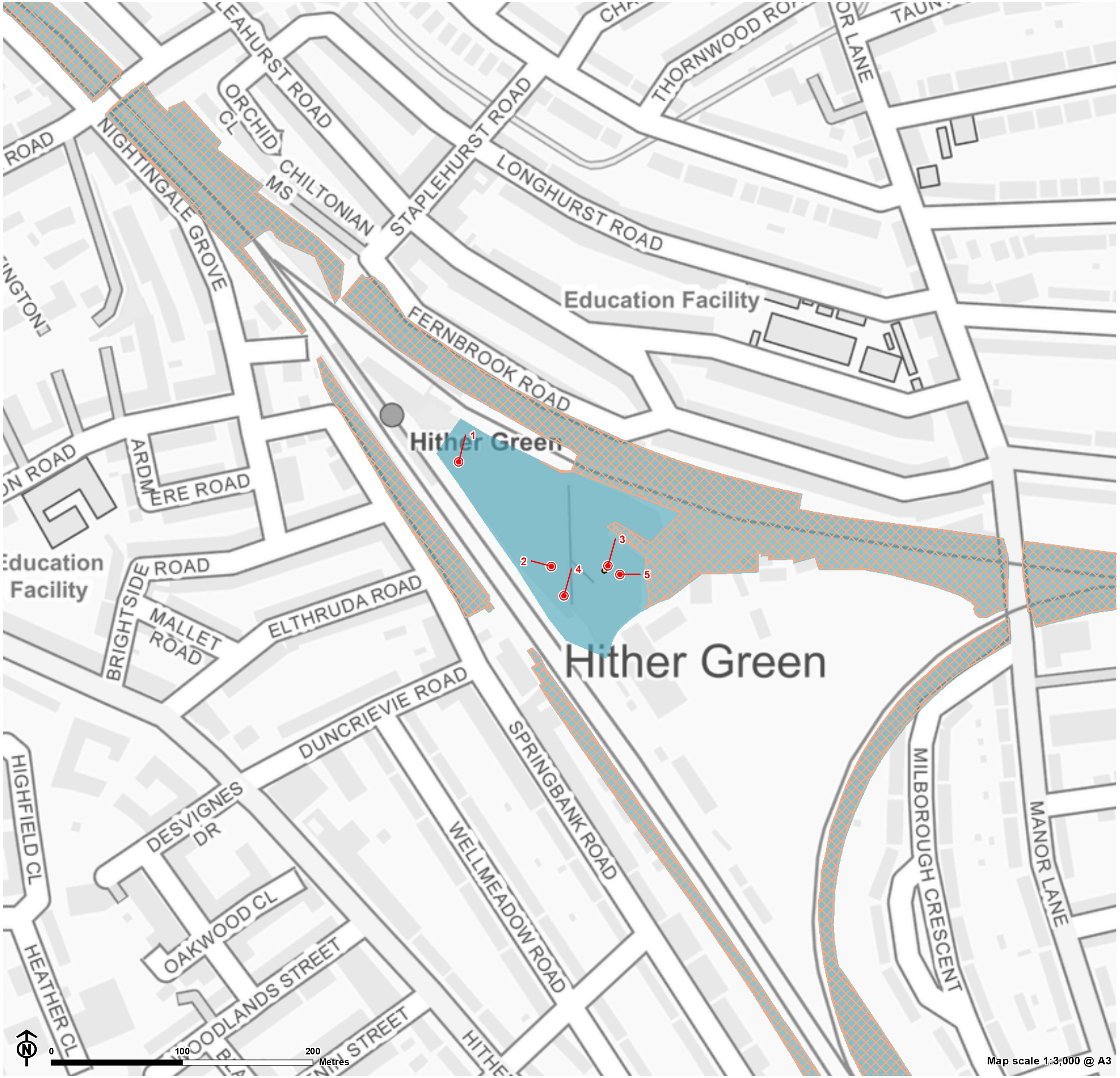
Hither Green Station: Borough Grade

CB:AHB EB:Hardie-Brown_A LUC FIGA2_11752_r0_SiteWalkoverDDP_A3L 31/08/2022
Source:LBL, LUC

Hither Green to Grove Park Corridor: Establishing Metropolitan SINC Status
for London Borough of Lewisham

LUC

Figure A.6: Site Walkover Mapping (Hither Green Station)



LEAHURST ROAD
ORCHID CL
CHILTONIAN MS
STAPLEHURST ROAD
THORNWOOD ROAD
LONGHURST ROAD
NIGHTINGALE GROVE
FERNBROOK ROAD
Education Facility
Hither Green
1
2
3
4
5
ARDMERE ROAD
BRIGHTSIDE ROAD
MALLET ROAD
ELTHRUDA ROAD
DUNCRIEVIE ROAD
SPRINGBANK ROAD
WELLMEADOW ROAD
DESVIGNES DR
OAKWOOD CL
WOODLANDS STREET
HIGHFIELD CL
HEATHER CL
MILBOROUGH CRESCENT
MANOR LANE
0
100
200
Metres
Map scale 1:3,000 @ A3

- Target note
- No access. Surveyed from adjacent land only

Invasive species

- Japanese knotweed

SINC

- Hither Green Station: Borough Grade

CB:AHB EB:Hardie-Brown_A LUC FIGA2_11752_r0_SiteWalkoverDDP_A3L 31/08/2022
Source:LBL, LUC

Hither Green to Grove Park Corridor: Establishing Metropolitan SINC Status
for London Borough of Lewisham

LUC

Figure A.5: Site Walkover Mapping (Reigate Wood Open Space)

- Target note
- No access. Surveyed from adjacent land only

Equipment

- Anabat Express
- Camera trap

Invasive species

- Japanese knotweed

SINC

- Grove Park Nature Reserve: Borough Grade
- Reigate Road Open Space: Borough Grade
- Cox's Wood: *potential* SINC

0 100 200 Metres

Map scale 1:3,000 @ A3

CB:AHB EB:Hardie-Brown_A LUC FIGA2_11752_r0_SiteWalkoverDDP_A3L 31/08/2022
Source:LBL, LUC

Hither Green to Grove Park Corridor: Establishing Metropolitan SINC Status
for London Borough of Lewisham

LUC

Figure A.4: Site Walkover Mapping (Ringway Community Gardens)

- Target note
- No access. Surveyed from adjacent land only

Equipment

- Anabat Express
- Camera trap

Invasive species

- Japanese knotweed

SINC

- Grove Park Nature Reserve: Borough Grade
- Hither Green Sidings: Borough Grade
- Reigate Road Open Space: Borough Grade
- Cox's Wood: *potential* SINC

CB:AHB EB:Hardie-Brown_A LUC FIGA2_11752_r0_SiteWalkoverDDP_A3L 31/08/2022
Source:LBL, LUC

Appendix B

Condition Assessment Proformas

Hither Green Station

- Pond
- Semi-Natural Broadleaved Woodland (south section)
- Semi-Natural Broadleaved Woodland (north section)

Condition Proforma B.1: Hither Green Station Pond

JNCC PH1 Classification

- G1 Standing open water

Condition Sheet

- Pond

Habitat Description

- Small woodland pond bound by marginal vegetation including Japanese knotweed.

Table B.1: Condition assessment of Hither Green Station pond

Condition Assessment Criteria	Score
1: The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Fail
2: There is semi-natural habitat for at least 10m from the pond edge.	Pass
3: Less than 10% of the pond is covered with duckweed or filamentous algae.	Pass
4: The pond is not artificially connected to other waterbodies.	Pass
5: Pond water levels should be able to fluctuate naturally throughout the year.	Pass
6: There is an absence of non-native plant and animal species.	Fail

Condition Assessment Criteria	Score
7: The pond is not artificially stocked with fish.	Pass
Total	5 out of 7
Condition	Moderate

Suggested Enhancements to Improve Condition

- Address water quality (likely to require desilting).
- Control Japanese knotweed.

Condition Proforma B.2: Hither Green Station Semi-Natural Broadleaved Woodland (south section)

JNCC PH1 Classification

- A1.1 Semi-natural broadleaved woodland

Condition Sheet

- Woodland

Habitat Description

- Canopy dominated by sycamore. Shrub layer included occasional elder and Japanese knotweed. Ground flora included frequent bindweed, common nettle, willow herb with rarely hedge garlic and creeping buttercup.

Table B.2: Condition assessment of Hither Green Station semi-natural broadleaved woodland (south section)

Indicator	Score
1: Age distribution of trees.	Poor (1)
2: Wild, domestic and feral herbivore damage.	Good (3)
3: Invasive plant species.	Moderate (2)
4: Number of native tree species.	Poor (1)
5: Cover of native tree species.	Poor (1)
6: Open space within woodland.	Good (3)

Indicator	Score
7: Woodland regeneration.	Moderate (2)
8: Tree health/	Good (3)
9: Vegetation and ground flora.	Poor (1)
10: Woodland vertical structure.	Poor (1)
11: Veteran trees.	Poor (1)
12: Amount of deadwood.	Poor (1)
13: Woodland disturbance.	Poor (1)
Total	21 out of 39
Condition	Poor

Suggested Enhancements to Improve Condition

- Selective thin sycamore.
- Plant native shrubs and trees.
- Control Japanese knotweed.
- Create deadwood habitat.

Condition Proforma B.3: Hither Green Station Semi-Natural Broadleaved Woodland (north section)

JNCC PH1 Classification

- A1.1 Semi-natural broadleaved woodland

Condition Sheet

- Woodland

Habitat Description

- Canopy comprised abundant sycamore with frequent oak and occasional cherry and silver birch. Shrub layer comprised occasional oak, holly, sycamore, hawthorn and buddleia. Ground flora comprised abundant common nettle with occasional cleavers, fern, willowherb and rarely cow parsley, wood avens, hart's tongue fern, redcurrant, hogweed and green alkanet.

Table B.3: Condition assessment of Hither Green Station semi-natural broadleaved woodland (north section)

Indicator	Score
1: Age distribution of trees.	Moderate (2)
2: Wild, domestic and feral herbivore damage.	Good (3)
3: Invasive plant species.	Moderate (2)
4: Number of native tree species.	Moderate (2)

Indicator	Score
5: Cover of native tree species.	Poor (1)
6: Open space within woodland.	Good (3)
7: Woodland regeneration.	Moderate (2)
8: Tree health/	Good (3)
9: Vegetation and ground flora.	Poor (1)
10: Woodland vertical structure.	Moderate (2)
11: Veteran trees.	Poor (1)
12: Amount of deadwood.	Poor (1)
13: Woodland disturbance.	Poor (1)
Total	24 out of 39
Condition	Poor

Suggested Enhancements to Improve Condition

- Selective thin sycamore.
- Plant native shrubs and trees.
- Control buddleia.
- Create deadwood habitat.

Hither Green Sidings (Network Rail)

- Pond
- Semi-Natural Broadleaved Woodland

Condition Proforma B.4: Hither Green Sidings (Network Rail) Pond

JNCC PH1 Classification

- G1 Standing open water

Condition Sheet

- Pond

Habitat Description

- Small pond used for recreational angling.

Table B.4: Condition assessment of Hither Green Sidings (Network Rail) pond

Condition Assessment Criteria	Score
1: The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Fail
2: There is semi-natural habitat for at least 10m from the pond edge.	Pass
3: Less than 10% of the pond is covered with duckweed or filamentous algae.	Pass
4: The pond is not artificially connected to other waterbodies.	Pass
5: Pond water levels should be able to fluctuate naturally throughout the year.	Fail
6: There is an absence of non-native plant and animal species.	Fail

Condition Assessment Criteria	Score
7: The pond is not artificially stocked with fish.	Fail
8: In non-woodland ponds, plants should cover at least 50% of the pond area that is less than 3m deep.	Fail
9: The surface of non-woodland ponds is no more than 50% shaded by woody bankside species.	Pass
Total	4 out of 9
Condition	Poor

Suggested Enhancements to Improve Condition

- Remove non-native fish.
- Plant native aquatic plants.

Condition Proforma B.5: Hither Green Sidings (Network Rail) Semi-Natural Broadleaved Woodland

JNCC PH1 Classification

- A1.1 Semi-natural broadleaved woodland

Condition Sheet

- Woodland

Habitat Description

- Includes small area of wet woodland.

Table B.5: Condition assessment of Hither Green Sidings (Network Rail) semi-natural broadleaved woodland

Indicator	Score
1: Age distribution of trees.	Moderate (2)
2: Wild, domestic and feral herbivore damage.	Good (3)
3: Invasive plant species.	Good (3)
4: Number of native tree species.	Good (3)
5: Cover of native tree species.	Good (3)
6: Open space within woodland.	Good (3)
7: Woodland regeneration.	Good (3)
8: Tree health/	Good (3)

Indicator	Score
9: Vegetation and ground flora.	Moderate (2)
10: Woodland vertical structure.	Moderate (2)
11: Veteran trees.	Poor (1)
12: Amount of deadwood.	Poor (1)
13: Woodland disturbance.	Poor (1)
Total	30 out of 39
Condition	Moderate

Suggested Enhancements to Improve Condition

- Selective thin trees.
- Create deadwood habitat.

Hither Green Sidings (Willow Tree Riding Establishment)

- Semi-Natural Broadleaved Woodland

Condition Proforma B.6: Hither Green Sidings (Willow Tree Riding Establishment) Semi-Natural Broadleaved Woodland

JNCC PH1 Classification

- A1.1 Semi-natural broadleaved woodland

Condition Sheet

- Woodland

Habitat Description

- No access. Surveyed from adjacent land only. Canopy comprised abundant willow, frequent cherry, sycamore, oak and goat willow. Japanese knotweed occasionally noted in shrub layer.

Table B.6: Condition assessment of Hither Green Sidings (Willow Tree Riding Establishment) semi-natural broadleaved woodland

Indicator	Score
1: Age distribution of trees.	Moderate (2)
2: Wild, domestic and feral herbivore damage.	Good (3)
3: Invasive plant species.	Moderate (2)
4: Number of native tree species.	Good (3)
5: Cover of native tree species.	Good (3)

Indicator	Score
6: Open space within woodland.	Good (3)
7: Woodland regeneration.	Good (3)
8: Tree health/	Poor (1)
9: Vegetation and ground flora.	Poor (1)
10: Woodland vertical structure.	Good (3)
11: Veteran trees.	Poor (1)
12: Amount of deadwood.	Poor (1)
13: Woodland disturbance.	Poor (1)
Total	27 out of 39
Condition	Moderate

Suggested Enhancements to Improve Condition

- Selective thin trees.
- Create deadwood habitat.
- Control Japanese knotweed.

Grove Park Nature Reserve

- Pond
- Semi-Natural Broadleaved Woodland
- Unimproved Grassland
- Dense Scrub

Condition Proforma B.7: Grove Park Nature Reserve Pond

JNCC PH1 Classification

- G1 Standing open water

Condition Sheet

- Pond

Habitat Description

- Small woodland pond with 100% duckweed cover.

Table B.7: Condition assessment of Grove Park Nature Reserve pond

Condition Assessment Criteria	Score
1: The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Pass
2: There is semi-natural habitat for at least 10m from the pond edge.	Pass
3: Less than 10% of the pond is covered with duckweed or filamentous algae.	Fail
4: The pond is not artificially connected to other waterbodies.	Fail
5: Pond water levels should be able to fluctuate naturally throughout the year.	Pass
6: There is an absence of non-native plant and animal species.	Pass

Condition Assessment Criteria	Score
7: The pond is not artificially stocked with fish.	Pass
Total	5 out of 7
Condition	Moderate

Suggested Enhancements to Improve Condition

- Control duckweed.

Condition Proforma B.8: Grove Park Nature Reserve Semi-Natural Broadleaved Woodland

JNCC PH1 Classification

- A1.1 Semi-natural broadleaved woodland

Condition Sheet

- Woodland

Habitat Description

- Canopy comprised abundant oak and ash with occasional horse chestnut. Scrub comprised frequent hawthorn, snowberry and bramble, occasional holly and elder, with rarely gorse, yew, field maple and sycamore. Ground flora was dominated by ivy with frequent bluebell, cock's foot, cow parsley and green alkanet. False oat grass, hedge garlic, creeping bent, curled dock, pendulous sedge and herb Robert were rarely noted.

Table B.8: Condition assessment of Grove Park Nature Reserve semi-natural broadleaved woodland

Indicator	Score
1: Age distribution of trees.	Moderate (2)
2: Wild, domestic and feral herbivore damage.	Good (3)
3: Invasive plant species.	Moderate (2)
4: Number of native tree species.	Moderate (2)
5: Cover of native tree species.	Good (3)

Indicator	Score
6: Open space within woodland.	Good (3)
7: Woodland regeneration.	Moderate (2)
8: Tree health/	Moderate (2)
9: Vegetation and ground flora.	Poor (1)
10: Woodland vertical structure.	Good (3)
11: Veteran trees.	Poor (1)
12: Amount of deadwood.	Moderate (2)
13: Woodland disturbance.	Poor (1)
Total	27 out of 39
Condition	Moderate

Suggested Enhancements to Improve Condition

- Selectively thin and/or veteranise ash.
- Control snowberry.

Condition Proforma B.9: Grove Park Nature Reserve Unimproved Grassland

JNCC PH1 Classification

- B3.1 Unimproved calcareous grassland
- B2.2 Semi-improved neutral grassland

Condition Sheet

- Grassland (medium, high and very high distinctiveness)

Habitat Description

- Railway embankment comprising unimproved calcareous grading into semi-improved neutral grassland. Managed through hay cuts in Autumn and March.
- See Calcareous Grassland Assessment for full species list.

Table B.9: Condition assessment of Grove Park Nature Reserve unimproved grassland

Condition Assessment Criteria	Score
1: The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type. Wildflowers, sedges and indicator species for the specific grassland habitat types are very clearly and easily visible throughout the sward.	Pass
2: Sward height is varied creating microclimates which provide opportunities for insects, bird and small mammals to live and breed.	Pass

Condition Assessment Criteria	Score
3: Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Fail
4: Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	Pass
5: There is an absence of invasive non-native species. Combined cover of species indicative of sub-optimal condition and physical damage accounts for less than 5% of total area.	Pass
6: There are greater than 9 species per metre squared.	Pass
Total	5 out of 6
Condition	Good

Suggested Enhancements to Improve Condition

- Consider chain harrow to reduce thatch layer.

Condition Proforma B.10: Grove Park Nature Reserve Dense Scrub

JNCC PH1 Classification

- A2.1 Dense/continuous scrub

Condition Sheet

- Scrub

Habitat Description

- No access. Surveyed from adjacent land only. Dense scrub. Species comprised frequent willow, hawthorn, bramble with occasional oak and cherry. Sycamore, birch and ash were rarely noted. Common vetch, cock's foot, creeping buttercup and pendulous sedge were also rarely noted within clear areas.

Table B.10: Condition assessment of Grove Park Nature Reserve dense scrub

Condition Assessment Criteria	Score
1: Habitat is representative of UKHab description. There are at least three woody species, with no one species comprising more than 75% of the cover.	Pass
2: There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.	Pass
3: There is an absence of invasive non-native species and species indicative of sub-optimal condition make up less than 5% of ground cover.	Pass

Condition Assessment Criteria	Score
4: The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).	Pass
5: There are clearings, glades or rides present within the scrub, providing sheltered edges.	Pass
Total	5 out of 5
Condition	Good

Suggested Enhancements to Improve Condition

- Consider rotational cutting regime to diversify structure.

Cox's Wood

- Semi-Natural Broadleaved Woodland

Condition Proforma B.11: Cox's Wood Semi-Natural Broadleaved Woodland

JNCC PH1 Classification

- A1.1 Semi-natural broadleaved woodland

Condition Sheet

- Woodland

Habitat Description

- Continuation of woodland at Grove Park Nature Reserve with high abundance of ash.

Table B.11: Condition assessment of Cox's Wood semi-natural broadleaved woodland

Indicator	Score
1: Age distribution of trees.	Moderate (2)
2: Wild, domestic and feral herbivore damage.	Good (3)
3: Invasive plant species.	Good (3)
4: Number of native tree species.	Moderate (2)
5: Cover of native tree species.	Good (3)
6: Open space within woodland.	Good (3)
7: Woodland regeneration.	Good (3)
8: Tree health/	Moderate (2)

Indicator	Score
9: Vegetation and ground flora.	Poor (1)
10: Woodland vertical structure.	Moderate (2)
11: Veteran trees.	Poor (1)
12: Amount of deadwood.	Moderate (2)
13: Woodland disturbance.	Poor (1)
Total	28 out of 39
Condition	Moderate

Suggested Enhancements to Improve Condition

- Selectively thin and/or veteranise ash.
- Create deadwood habitat.

Reigate Road Open Space

- Semi-Natural Broadleaved Woodland
- Semi-Improved Neutral Grassland

Condition Proforma B.12: Reigate Road Open Space Semi-Natural Broadleaved Woodland

JNCC PH1 Classification

- A1.1 Semi-natural broadleaved woodland

Condition Sheet

- Woodland

Habitat Description

- Canopy comprised frequent ash and sycamore with occasional aspen. Scrub comprised occasional elder, hawthorn and bramble. Ground flora was dominated by ivy with rarely bindweed.

Table B.12: Condition assessment of Reigate Road Open Space semi-natural broadleaved woodland

Indicator	Score
1: Age distribution of trees.	Moderate (2)
2: Wild, domestic and feral herbivore damage.	Good (3)
3: Invasive plant species.	Moderate (2)
4: Number of native tree species.	Moderate (2)
5: Cover of native tree species.	Moderate (2)
6: Open space within woodland.	Good (3)
7: Woodland regeneration.	Moderate (2)

Indicator	Score
8: Tree health/	Good (3)
9: Vegetation and ground flora.	Poor (1)
10: Woodland vertical structure.	Moderate (2)
11: Veteran trees.	Poor (1)
12: Amount of deadwood.	Poor (1)
13: Woodland disturbance.	Poor (1)
Total	25 out of 39
Condition	Poor

Suggested Enhancements to Improve Condition

- Selectively thin and/or veteranise ash.
- Create deadwood habitat.
- Create formal recreational route.

Condition Proforma B.13: Reigate Road Open Space Semi-Improved Neutral Grassland

JNCC PH1 Classification

- B2.2 Neutral grassland (semi-improved)

Condition Sheet

- Grassland (medium, high and very high distinctiveness)

Habitat Description

- Recently planted with meadow mix (2020).
- Dominated by crested dog's tail, occasional common bird's-foot-trefoil, oxeye daisy, yarrow and ribwort plantain with rarely red clover, common vetch and white clover.

Table B.13: Condition assessment of Reigate Road Open Space semi-improved neutral grassland

Condition Assessment Criteria	Score
1: The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type. Wildflowers, sedges and indicator species for the specific grassland habitat types are very clearly and easily visible throughout the sward.	Pass
2: Sward height is varied creating microclimates which provide opportunities for insects, bird and small mammals to live and breed.	Pass
3: Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Pass

Condition Assessment Criteria	Score
4: Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	Pass
5: There is an absence of invasive non-native species. Combined cover of species indicative of sub-optimal condition and physical damage accounts for less than 5% of total area.	Pass
6: There are greater than 9 species per metre squared.	Fail
Total	5 out of 6
Condition	Good

Suggested Enhancements to Improve Condition

- Continue to manage as meadow (annual cut removing arisings).

Appendix C

Calcareous Grassland Assessment

Quadrant 1

- Grid Reference: TQ 40046 72954
- Average Sward Height: >1 metre
- Date: 20.05.2022
- Surveyor: KL
- Description: Good quality semi-improved neutral grassland with a high sward height, dominated by grasses.

Figure C.1: Quadrant 1 grassland

Table C.1: Calcareous grassland assessment of quadrant 1

Species	DOMIN Value
False oat-grass; *Arrhenatherum elatius*	8
Tall fescue; *Schedonorus arundinacea*	8
Meadow vetchling; *Lathyrus pratensis*	6
Meadow foxtail; *Alopecurus pratensis*	5
Rough meadow-grass; *Poa trivialis*	4
Tufted vetch; *Vicia cracca*	3
Yorkshire fog; *Holcus lanatus*	3
Agrimony; *Agrimonia eupatoria*	2
Dandelion; *Taraxacum* agg.	2
Common hogweed; *Heracleum sphondylium*	1
Common vetch; *Vicia sativa* ssp. *segetalis*	1
Species Richness	11

Quadrant 2

- Grid Reference: TQ 40065 72936
- Average Sward Height: 0.9 metres
- Date: 20.05.2022
- Surveyor: KL
- Description: Good quality semi-improved neutral grassland with a high sward height, dominated by grasses.

Figure C.2: Quadrant 2 grassland

Table C.2: Calcareous grassland assessment of quadrant 2

Species	DOMIN Value
Tall fescue; *Schedonorus arundinacea*	8
Cock's-foot; *Dactylis glomerata*	8
Meadow vetchling; *Lathyrus pratensis*	6
Common vetch; *Vicia sativa* ssp. *segetalis*	5
Smooth tare; *Vicia tetrasperma*	5
Yorkshire fog; *Holcus lanatus*	5
Meadow foxtail; *Alopecurus pratensis*	4
Rough meadow-grass; *Poa trivialis*	4
False oat-grass; *Arrhenatherum elatius*	3
Common sorrel; *Rumex acetosa*	2
Tufted vetch; *Vicia cracca*	1
Bramble; *Rubus fruticosus* agg.	1
Species Richness	12

Quadrant 3

- Grid Reference: TQ 40079 72922
- Average Sward Height: >1 metre
- Date: 20.05.2022
- Surveyor: KL
- Description: Good quality semi-improved neutral grassland with a high sward height, dominated by grasses.

Figure C.3: Quadrant 3 grassland

Table C.3: Calcareous grassland assessment of quadrant 3

Species	DOMIN Value
Tall fescue; *Schedonorus arundinacea*	8
False oat-grass; *Arrhenatherum elatius*	7
Cock's-foot; *Dactylis glomerata*	6
Meadow vetchling; *Lathyrus pratensis*	6
Meadow foxtail; *Alopecurus pratensis*	5
Rough meadow-grass; *Poa trivialis*	5
Red clover; *Trifolium pratense*	5
Common vetch; *Vicia sativa* ssp. *segetalis*	2
Tufted vetch; *Vicia cracca*	2
Yorkshire fog; *Holcus lanatus*	2
Cleavers; *Galium aparine*	1
Species Richness	11

Quadrant 4

- Grid Reference: TQ 40101 72867
- Average Sward Height: >1 metre
- Date: 20.05.2022
- Surveyor: KL
- Description: Semi-improved neutral grassland with a high sward height and frequent common hogweed.

Figure C.4: Quadrant 4 grassland

Table C.4: Calcareous grassland assessment of quadrant 4

Species	DOMIN Value
False oat-grass; *Arrhenatherum elatius*	6
Tall fescue; *Schedonorus arundinacea*	6
Common hogweed; *Heracleum sphondylium*	6
Cock's-foot; *Dactylis glomerata*	5
Meadow vetchling; *Lathyrus pratensis*	5
Rough meadow-grass; *Poa trivialis*	3
Common vetch; *Vicia sativa* ssp. *segetalis*	2
Meadow foxtail; *Alopecurus pratensis*	2
Red clover; *Trifolium pratense*	1
Tufted vetch; *Vicia cracca*	1
Bramble; *Rubus fruticosus* agg.	1
Species Richness	11

Quadrant 5

- Grid Reference: TQ 40122 72829
- Average Sward Height: 0.9 metres
- Date: 20.05.2022
- Surveyor: KL
- Description: Calcareous grassland with a high sward height, dominated by yellow oat-grass.

Figure C.5: Quadrant 5 grassland

Table C.5: Calcareous grassland assessment of quadrant 5

Species	DOMIN Value
Yellow oat-grass; *Trisetum flavescens*	8
Meadow vetchling; *Lathyrus pratensis*	6
False oat-grass; *Arrhenatherum elatius*	5
Tufted vetch; *Vicia cracca*	4
Rough meadow-grass; *Poa trivialis*	3
Smooth tare; *Vicia tetrasperma*	1
Species Richness	6

Quadrant 6

- Grid Reference: TQ 40131 72810
- Average Sward Height: 0.9 metres
- Date: 20.05.2022
- Surveyor: KL
- Description: Calcareous grassland with a high sward height, dominated by yellow oat-grass.

Figure C.6: Quadrant 6 grassland

Table C.6: Calcareous grassland assessment of quadrant 6

Species	DOMIN Value
Yellow oat-grass; *Trisetum flavescens*	9
Meadow vetchling; *Lathyrus pratensis*	5
Common bird's-foot trefoil; *Lotus corniculatus*	4
Tufted vetch; *Vicia cracca*	4
Sweet vernal-grass; *Anthoxanthum odoratum*	3
Smooth tare; *Vicia tetrasperma*	3
False oat-grass; *Arrhenatherum elatius*	2
Sheep's fescue; *Festuca ovina*	2
Tall fescue; *Schedonorus arundinacea*	1
Cock's-foot; *Dactylis glomerata*	1
Common vetch; *Vicia sativa* ssp. *segetalis*	1
Species Richness	11

Quadrant 7

- Grid Reference: TQ 40149 72796
- Average Sward Height: 0.7 metres
- Date: 20.05.2022
- Surveyor: KL
- Description: Calcareous grassland with a high sward height, dominated by grasses.

Figure C.7: Quadrant 7 grassland

Table C.7: Calcareous grassland assessment of quadrant 7

Species	DOMIN Value
Yellow oat-grass; *Trisetum flavescens*	6
Sheep's fescue; *Festuca ovina*	6
Sweet vernal-grass; *Anthoxanthum odoratum*	6
False oat-grass; *Arrhenatherum elatius*	5
Common bird's-foot trefoil; *Lotus corniculatus*	5
Meadow vetchling; *Lathyrus pratensis*	4
Tufted vetch; *Vicia cracca*	3
Common knapweed; *Centaurea nigra*	3
Common dog violet; *Viola riviana*	3
Agrimony; *Agrimonia eupatoria*	3
Yorkshire fog; *Holcus lanatus*	1
Red clover; *Trifolium pratense*	1
Creeping cinquefoil; *Potentilla reptans*	1
Species Richness	13

Quadrant 8

- Grid Reference: TQ 40152 72772
- Average Sward Height: 0.7 metres
- Date: 20.05.2022
- Surveyor: KL
- Description: Calcareous grassland with a high sward height, dominated by tor grass and sheep's fescue.

Figure C.8: Quadrant 8 grassland

Table C.8: Calcareous grassland assessment of quadrant 8

Species	DOMIN Value
Tor grass; *Brachypodium pinnatum*	7
Sheep's fescue; *Festuca ovina*	5
Yellow oat-grass; *Trisetum flavescens*	4
Meadow vetchling; *Lathyrus pratensis*	4
Sweet vernal-grass; *Anthoxanthum odoratum*	3
Common bird's-foot trefoil; *Lotus corniculatus*	3
Common knapweed; *Centaurea nigra*	3
Agrimony; *Agrimonia eupatoria*	3
Common dog violet; *Viola riviana*	3
Tall fescue; *Schedonorus arundinacea*	2
False oat-grass; *Arrhenatherum elatius*	1
Cock's-foot; *Dactylis glomerata*	1
Tufted vetch; *Vicia cracca*	1
Creeping cinquefoil; *Potentilla reptans*	1
Species Richness	14

Appendix D

Schedule 9 Plants Recorded

Japanese Knotweed

- Hither Green Sidings (throughout)
- Hither Green Station (TQ 3917 7430)
- Reigate Road Open Space (TQ 3998 7292)

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Report produced by LUC

Bristol
12th Floor, Colston Tower, Colston Street, Bristol BS1 4XE
0117 929 1997
bristol@landuse.co.uk

Cardiff
16A, 15th Floor, Brunel House, 2 Fitzalan Rd, Cardiff CF24 0EB
0292 032 9006
cardiff@landuse.co.uk

Edinburgh
Atholl Exchange, 6 Canning Street, Edinburgh EH3 8EG
0131 202 1616
edinburgh@landuse.co.uk

Glasgow
37 Otago Street, Glasgow G12 8JJ
0141 334 9595
glasgow@landuse.co.uk

London
250 Waterloo Road, London SE1 8RD
020 7383 5784
london@landuse.co.uk

Manchester
6th Floor, 55 King Street, Manchester M2 4LQ
0161 537 5960
manchester@landuse.co.uk

landuse.co.uk

Landscape Design/Strategic Planning & Assessment
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