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COMMERCIAL PROPERTY ADVICE



Ecological Impact Assessment

Site: Elettra Avenue, Waterlooville

On Behalf Of: Hargreaves Properties Ltd.

Prepared By:

Abigail Lloyd

Harris Lamb | Grosvenor House | 75-76 Francis Road | Edgbaston | Birmingham B16 8SP

Telephone: 0121 455 9455 | Facsimile: 0121 455 6595 E-mail: abigail.lloyd@harrislamb.com

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30/08/2024	Draft	Abigail Lloyd	Susan Sweetman MCIEEM
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This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development” and in accordance with the Chartered Institute of Ecology and Environmental Management’s Code of Professional Conduct.

The findings of this study are valid for a period of 24 months from the date of survey. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

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1. EXECUTIVE SUMMARY

Harris Lamb Property Consultancy (HLPC) was commissioned by Hargreaves Properties Ltd to undertake an Ecological Impact Assessment (EclA) of the site of a proposed development off Elettra Avenue, Waterlooville Park in Hampshire. The purpose of the Ecological Impact Assessment is to identify the features of ecological importance on site and provide an assessment of the potential impacts the proposed development could have on these features. The current proposals and description of the application is: "Outline planning application with All Matters Reserved Apart from Access for Development within Class E (Light Industrial, Retail, Café and Restaurants, Leisure / Gym), B2, B8, and B8 Trade Counters".

The scope of the appraisal comprised a desk study, including a search for designated sites and protected and/or notable species, and a field survey conducted following the UK Habitat Classification methodology. The presence or potential presence of protected species was noted where observed and additional survey undertaken where necessary.

The following recommendations are made in association with the proposed development of the site:

- R1: Biodiversity:** The mitigation hierarchy has been followed with consideration given to retain and enhance the more notable habitats on site such as the hedgerows and mixed scrub sections. The baseline value of the site is 6.00 habitat units and 0.39 hedgerow units. Once the project design proposals have been finalised, a full metric calculation will be carried out to see how many biodiversity units will be generated to meet the 10% net gain required for habitat and hedgerow units.
- R2: Bats:** The site has habitat that is considered sub-optimal to support commuting and foraging bats due to its limited extent and lack of ecological connectivity to the wider environments. The site is also boarded by roads, commercial development associated with Waterlooville Park and housing and as such the site is surrounded by sources of light at night. However, the hedgerows and mixed scrub provides some very limited opportunities for foraging and there are a number of bat records within close proximity to the site. As a result, automated bat detector surveys are being undertaken monthly from May to October inclusive in 2024, whereby detectors are deployed for a minimum of five consecutive nights per month to record all bat activity in accordance with the latest survey guidance. No Nighttime Bat Walkover (NBW) transect surveys were recommended due to the small area and urban location of the site. At the time of writing, four out of six static detector deployments have been completed. Brown long eared, and myotis sp. were identified infrequently during the survey period. The low number of recordings indicate that the hedgerows aren't an important commuting/foraging feature for these species and considered to be used by bats within the local landscape on an opportunistic basis. However, a sensitive lighting strategy should be implemented to limit the impact to ecological corridors and landscaping design produced that maintains connectivity to the wider environment. Two trees are to be felled facilitate the development, this was assessed by a licenced bat ecologist and considered to have moderate potential to support roosting bats and two further nocturnal surveys was deemed necessary. These were undertaken in July and August 2024 and no roosts were identified. If the trees have not been felled within 12 months of this survey effort, they will need to be re-assessed and repeat surveys undertaken.
- R3: Amphibians:** The eDNA surveys of ponds, where access was granted, was completed during the survey period 15th April – 30th June 2018 and again in 2023. All ponds surveyed returned negative eDNA results. Some very limited suitable habitat is present on site for GCN in their terrestrial phase and other common amphibians. Further mitigation measures are recommended during the construction phases of the proposed development by means of Reptile and Amphibian Method Statement (RAMS) or agreed similar and secured via the appropriate planning obligation.

- R4: Nesting birds:** It is advised to complete any vegetation clearance outside of the breeding bird season of March to August (inclusive). Clearance within this period should be immediately preceded by a nesting bird check conducted by an ecologist. Any active nests would need to remain unaffected until all chicks have fledged. The erection of bird boxes, in particular integral swift or house sparrow nest boxes, are recommended as part of the ecological enhancements for birds.
- R5: Reptiles:** The habitats on site were considered sub-optimal for reptiles as the site lacks the complex habitat structure that is typically required by reptiles for shelter, foraging and basking. Hedgerows and scrub patches provide some limited suitable habitat and an ecological corridor for dispersal. Some more limited habitat is present where urban debris and rubble has built up around the derelict site. Due to the presence of these, it is recommended that a Reptile and Amphibian Method Statements (RAMS) is followed during the construction phase of the development. However, given that during the 2018 survey effort no reptiles were identified, and when the site was re-appraised, considered to be suboptimal, no further survey was considered necessary.
- R6: Badger:** No evidence of badger was found during the survey, however, as they are a very mobile species, it is recommended that a pre-commencement check for any new setts or signs of badger activity is conducted prior to works commencing. The pre-commencement check should be carried out by a suitably qualified ecologist.
- R7: Hedgehog:** General good working practices in relation to mammals should be followed at all times during construction. Habitats and commuting routes for hedgehogs should be incorporated into the final masterplan.

2. INTRODUCTION

2.1 Project background

Harris Lamb was commissioned by Hargreaves Properties Ltd to undertake an Ecological Impact Assessment of the site of a proposed development on land off Elettra Avenue, Waterlooville, Havant, Hampshire, England, PO7 7TZ. This assessment is required to inform a planning application associated with the development of the site.

The purpose of this report is to:

- Identify key ecological constraints associated with the proposed development and input into the scheme design to minimise ecological impacts where possible.
- Set out mitigation measures required to ensure compliance with nature conservation legislation and address potentially significant ecological effects.
- Identify how mitigation measures could be secured.
- Provide an assessment of significance of residual effects.
- Identify appropriate enhancement measures.
- Identify appropriate post-construction monitoring if relevant.

2.2 Site description and context

The site is 4.05 ha in size and was comprised of previously developed vacant land, mixed scrub, hedgerows, and modified grassland patches. Figure 1 shows the location of the site, which is located on the western built edge of Waterlooville, a town in the Borough of Havant in Hampshire, England, approximately 10 km northeast of Portsmouth; central OS grid reference: SU 67605 09850. The site is bounded by Elettra Avenue to the north and west, Silverthorne Way to the south, and the B2150 to the east. The site is set within an urban environment dominated by housing and commercial development.



Figure 1: Site Location Plan

2.3 Project description

The current proposals for the site based on the following set of drawings by HNW Architects, June 2024:

- 24018-HNW-XX-XX-RP-A-0500-P03 Design and Access Statement
- 24018-HNW-ZZ-ZZ-DR-A-1000-P01 Site Location Plan
- 24018-HNW-ZZ-ZZ-DR-A-2100 Proposed Site Plan – Use
- 24018-HNW-ZZ-ZZ-DR-A-2101 Proposed Site Plan – Access

3. METHODOLOGY

3.1 Desk Study

An ecological desk study was undertaken to determine the presence of any designated nature conservation sites and protected species in proximity to the site. This involved contacting appropriate statutory and non-statutory organisations which hold ecological data relating to the survey area.

The consultees for the desk study were:

- Natural England - MAGIC website for statutory conservation sites; and
- Hampshire Biodiversity Information Centre (HBIC) (records post-2000 only); and
- Nearby planning applications.

The desk study included a search for:

- Landscape Scale Conservation Initiatives;
- European statutory nature conservation sites in the UK within a 5 km radius of the site (extended to 10 km for any statutory site designated for bats);
- UK statutory sites within a 2 km radius; and,
- Non-statutory sites and protected/notable habitats and species records within a 2 km radius.

The data collected from the consultees is discussed in Chapter 3. In compliance with the terms and conditions relating to its commercial use, the full desk study data is not provided within this report.

The desk study also included a review of relevant local planning policy with regard to biodiversity and nature conservation (see Appendix 1).

3.2 UKHab survey

A field survey was conducted following the UKHab Version 2.0¹ methodology and the Institute of Environmental Assessment². UK Habitat classification is a standard technique for classifying and mapping British habitats. The aim is to provide a record of habitats that are present on site. During the survey, a Habitat Condition Assessment was carried out to determine the ecological status of each habitat recorded. The condition assessment was assessed using published criteria in the Statutory Metric Technical Annex I (2024)³, the details of which are presented in Section 8.

During the survey, the presence or potential presence of protected species was noted where observed. This included a review of suitable habitat opportunities or field signs of notable species groups (amphibians, bats, birds, terrestrial and aquatic invertebrates, terrestrial and aquatic mammals, plants and reptiles). The survey was carried out on 29th of May 2024 by Consultant Ecologist Abigail Lloyd (FISC Level 4).

The site has been subjected to previous ecological appraisals over the last six years, including July 2018, November 2020, July 2023, and May 2024.

Table 1: Survey Conditions

Parameter	Condition
Temperature (°C)	18
Cloud (%)	25
Wind (Beaufort)	1
Precipitation (%)	0

¹ UKHab Ltd (2023). UK Habitat Classification Version 2.0 (at <https://www.ukhab.org>).

² Institute of Environmental Assessment. (1995). Guidelines for Baseline Ecological Assessment, Institute of Environmental Assessment. E&FN Spon, An Imprint of Chapman and Hall. London.

³ Defra. (2024) The Statutory Metric – Technical Annex I: Condition Assessment Sheets and Methodology.

3.3 Biodiversity Metric Assessment

A Biodiversity Metric Assessment was used to calculate the value of any biodiversity enhancements at the site. The assessment uses the Statutory Biodiversity Metric calculation tool⁴ which provides a proxy measurement of biodiversity value using habitat attributes. The tool quantifies the biodiversity value of the site before and after any prospective enhancements, the difference in values equating to the proposed biodiversity uplift that the enhancement could achieve. Each habitat or linear feature recorded within the site is assigned a score for 'Distinctiveness' and 'Strategic Significance'. The strategic significance has been calculated using information provided in the Havant Borough Core Strategy (Adopted March 2011). No Local Nature Recovery Strategy (LNRS) has been published at time of writing this report.

3.4 Field survey constraints and limitations

The survey was carried out in May, which is within the recommended timeframe for completing an Ecological Appraisal (March – October inclusive).

3.5 Preliminary evaluation

The Preliminary Evaluation is an initial review of the ecological data to determine which features are likely to be a material consideration for the proposed development at the site. A material consideration is an ecological feature that by virtue of its legal status, its inclusion in any national policy or plan, rarity or contribution to local ecological networks, is worthy of further consideration in the planning system. Typical material considerations include statutory or non-statutory nature conservation sites, species protected by law, Habitat and Species of Principal Importance in England as defined by the Natural Environment and Rural Communities (NERC) Act 2006 or other ecological corridors and biodiversity.

3.6 Great Crested Newts

Waterbodies on site or within 500m of the site boundary, not separated by major barriers to amphibian dispersal, were identified using online Ordnance Survey maps and aerial imagery. A total of 8 ponds were identified within 500m of the proposed development (See Figure 2).

⁴ Statutory Biodiversity Metric. Defra, 2024. (<https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides>)

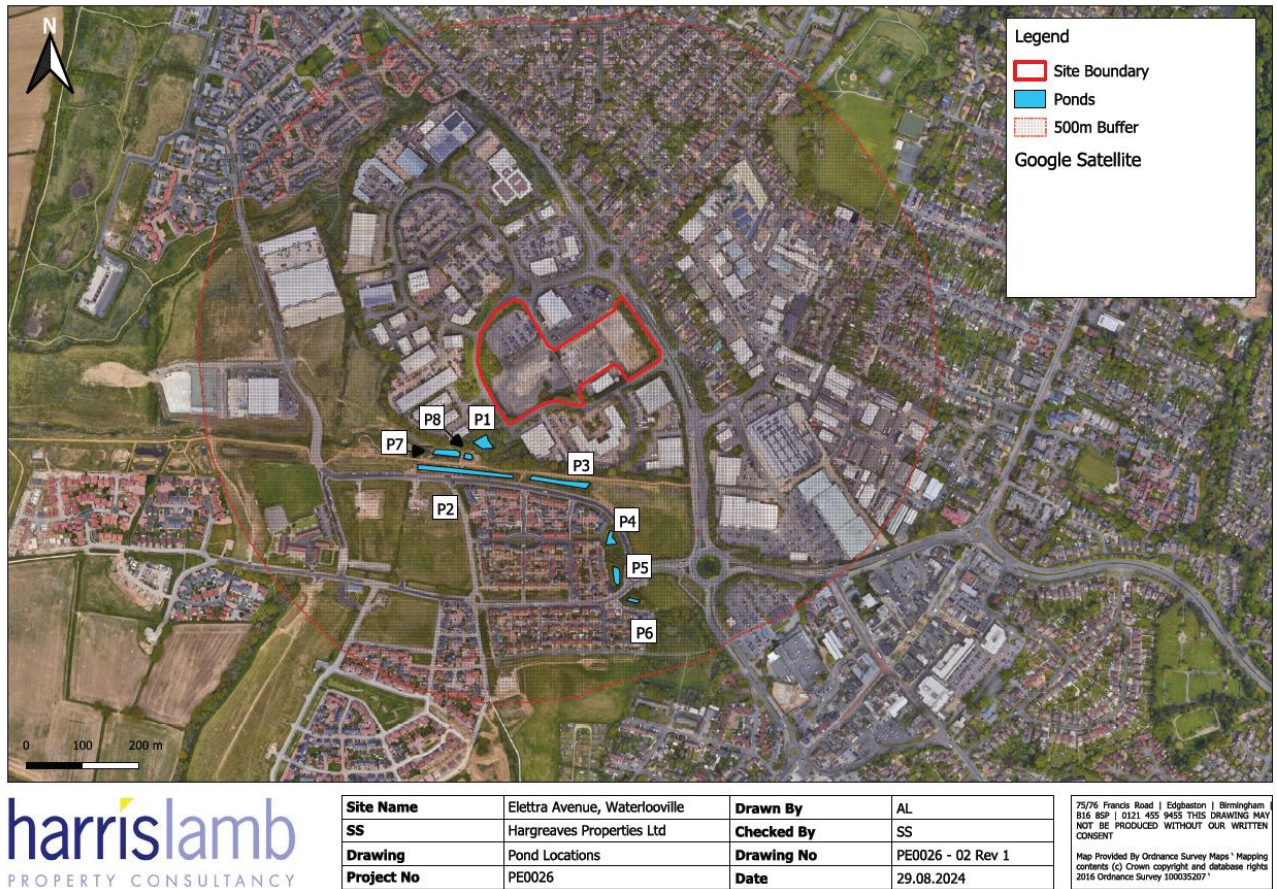


Figure 2: Ponds with 500m of the site boundary

One pond (P1) was identified c. 100m west of the site and a further five ponds were identified c. 160-340m south of the site (Figure 2). All ponds are separated from the site by Elettra Avenue/Silverthorne Way which are considered to be a barrier to newt dispersal. A HSI assessment was carried out on all the ponds and the results are summarised in Chapter 5.

Environmental DNA (eDNA) Sampling & Analysis

Environmental DNA (eDNA) was undertaken on ponds P1-P8 to determine the presence / absence of GCN DNA. This methodology has been approved by Natural England for the determination of GCN presence/absence.

Sampling was completed in 2018 and again 2023 by appropriately licensed ecologists who collected a sample of water from each waterbody. Sampling was undertaken using kits obtained from SureScreen Scientifics. The methodology comprised taking samples of agitated water from 20 locations around each waterbody and mixing thoroughly. A 15ml of this water was then placed into each of 6 sterile sample tubes containing preservative, precipitates and a DNA sequence that was used for degradation control. All samples were stored in accordance with the protocols provided by the laboratory. The samples were then transported under suitable conditions to SureScreen Scientifics laboratory for analysis. Following analysis, results provided by the laboratory could have one of three outcomes which are described in Table 2 below.

Table 2: Description of Possible Results of eDNA Analysis

Result	Description
Positive	A positive result means that eDNA from GCN was detected, confirming the species has been present within the water in the 20 days preceding sampling. An eDNA score would be provided indicating the number of positive replicates from a series of twelve.
Negative	DNA from GCN was not detected; in the case of negative samples the DNA extract is further tested for PCR inhibitors and degradation of the sample.

Inconclusive	Controls indicate degradation or inhibition of the sample, therefore the lack of detection of GCN DNA is not conclusive evidence for determining the absence of the species in the sample provided. Inhibition can occur through unexpected chemicals in the sample.
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3.7 Reptiles

An assessment of the suitability of the habitats present to support common reptile species was undertaken. In accordance with current guidance, this assessment involved a review of habitats and habitat structure for suitable shelter for reptiles such as areas of scrub and woodpiles, grassland with well-developed and varied structure, areas suitable for basking, large tussocks etc.

The site was subjected to a presence/absence reptile survey using 60 Artificial Cover Objects (ACO's) or refugia according to Froglife guidelines (1999)⁵ throughout September and October 2018. Artificial Cover Objects were constructed of c. 0.5m x 0.5m sheeting using a roofing felt as recommended by Froglife. In addition, natural refugia features already present i.e. rubble/brick piles, wooden planks, were searched.

The artificial refugia were left to 'bed in' for approximately six weeks. Once the artificial refugia had bedded in, seven non-consecutive survey visits were carried out to determine the presence/absence of reptile species on site. During each visit, the artificial refugia were checked visually from a distance to determine whether reptiles were basking on their surface. The artificial refugia were then carefully approached and lifted to check for reptiles sheltering beneath them.

Weather during the survey visits was conducive for surveying for reptiles, being dry and warm or mild. Froglife guidelines (1999) recommend ideal temperatures for reptile survey between 9°C and 18°C. Details on the survey timings and weather conditions are given in Table 3.

Table 3: Reptile survey timings and weather conditions.

Date	Weather conditions	Air Temperature °C
12/09/2018	Dry and windy	16°C
13/09/2018	Dry with 90% cloud cover	14°C
19/09/2018	Dry, clear sky and windy	21°C
26/09/2018	Dry, clear sky, no wind	17.5°C
27/09/2018	Dry, clear sky, no wind	10°C
30/09/2018	Dy, 70% cloud cover, little wind	14°C
01/09/2018	Dry, 20% cloud cover, no wind	9°C
09/10/2018	Dry, sunny, 10% cloud cover.	11.5°C

3.8 Bats

Ground Level Tree Assessments (GLTAs)

Trees that were subject to felling as part of the proposed development were assessed for their bat roost potential by a licenced bat ecologist. Tree assessments were undertaken from ground level, with the aid of a torch and binoculars, where required. During the survey Potential Roosting Features (PRF) for bats following current best practice, were recorded.

Two trees were assessed in June 2023, and using the best practice guidelines at time of survey, were given the classification of 'moderate' bat roost potential and it was recommended that two nocturnal bat surveys were undertaken to determine the presence or absence of a bat roost. The surveys were undertaken in July & August 2024, further details are given in Table 4.

⁵ Froglife (1999). Froglife Advice Sheet 10: Reptile Survey. Froglife, London

Table 4: Tree survey timings and weather conditions.

Date	Weather conditions	Air Temperature °C
15/07/2024	Dry after some rain earlier in the day, gentle breeze, and scattered clouds (55%)	17°C
08/08/2024	Dry after some rain earlier in the day, gentle breeze, and mostly cloudy (95%)	19°C

Automated Static Bat Detector Surveys

The potential for the site and immediate surrounds to support foraging and commuting bats was also assessed across the whole site with particular regard given to the presence of habitat features such as continuous hedgerows, watercourses and trees providing good connectivity across the site and wider landscape. Monthly deployments of automatic static detectors were undertaken. Static locations shown in Figure 3 below.



Site Name	Elettra Avenue, Waterloooville	Drawn By	AL
SS	Hargreaves Properties Ltd	Checked By	SS
Drawing	Static Locations	Drawing No	PE0026 - 03 Rev 1
Project No	PE0026	Date	29.08.2024

Figure 3: Static detector locations.

Two Anabat static detectors (Express and Swifts) were deployed for five consecutive nights during, May, June, July, and August 2024 in order to obtain an appraisal of bat activity across the site. Within the areas, locations of the static detectors were chosen based on those locations most likely to be used by foraging and commuting bats (see Figure 3). The locations of the static detectors were consistent every month for comparison, as recommended in the latest best practice guidelines. Data was analysed using AnalookW and/or Anabat Insight and assessed to species/genus level through sonogram identification. This was supported by species guidance produced by Russ (2012)⁶. See Tables 5, 6, 7, & 8 for further details.

⁶ Russ, J., (2012). British Bat calls: a guide to species identification. Pelagic Publishing, Exeter.

Table 5: May Static Detector Survey Details and Weather Conditions

Date	Sunset	Air Temperature	Weather
22.05.2024	20:57	13°C - 16°C	Sunny with some limited passing clouds, scattered showers, and a gentle breeze.
23.05.2024	20:58	10°C - 15°C	Sunny but cooler with some limited passing clouds, dry, and a gentle breeze.
24.05.2024	20:59	9°C - 14°C	Sunny but cooler with some limited passing clouds, dry, and a gentle breeze.
25.05.2024	21:01	13°C - 17°C	Sunny with some limited passing clouds, scattered showers, and a gentle breeze.
26.06.2024	21:02	13°C - 16°C	Sunny with some limited passing clouds, scattered showers, and a gentle breeze.

Table 6: June Static Detector Survey Details and Weather Conditions

Date	Sunset	Air Temperature	Weather
15.06.2024	21:19	13°C - 17°C	Sunny with some scattered clouds, scattered showers, and a gentle breeze.
16.06.2024	21:20	9°C - 18°C	Sunny but cooler overnight with some limited passing clouds, dry, and a gentle breeze.
17.06.2024	21:20	12°C - 17°C	Sunny with some scattered clouds, scattered showers, and a gentle breeze.
18.06.2024	21:21	13°C - 17°C	Sunny with some limited passing clouds, dry, and a gentle breeze.
19.06.2024	21:21	9°C - 14°C	Sunny but cooler overnight with some limited passing clouds, dry, and a gentle breeze.

Table 7: July Static Detector Survey Details and Weather Conditions

Date	Sunset	Air Temperature	Weather
15.07.2024	21:11	15°C - 17°C	Overcast with scattered clouds, heavy rain showers, and a gentle breeze.
16.07.2024	21:10	12°C - 18°C	Sunny with some limited passing clouds, dry, and a gentle breeze.
17.07.2024	21:09	12°C - 18°C	Sunny with some limited passing clouds, dry, and a very little breeze.
18.07.2024	21:08	14°C - 21°C	Sunny with some limited passing clouds, dry, and a very little breeze.
19.07.2024	21:07	17°C - 19°C	Sunny with some limited passing clouds, drizzle overnight, and a gentle breeze.

Table 8: August Static Detector Survey Details and Weather Conditions

Date	Sunset	Air Temperature	Weather
08.08.2024	20:37	18°C - 19°C	Sunny with some limited passing clouds, drizzle overnight, and a gentle breeze.
09.08.2024	20:35	12°C - 19°C	Sunny with some limited passing clouds, dry, and a gentle breeze.
10.08.2024	20:33	18°C - 21°C	Sunny with some limited passing clouds, drizzle overnight, and a gentle breeze.
11.08.2024	20:31	21°C - 23°C	Sunny and warm with some limited passing clouds, dry, and a light breeze.
12.08.2024	20:29	10°C - 21°C	Sunny but cooler overnight with some limited passing clouds, dry, and a very little breeze.

3.9 Badgers

The survey was undertaken in May 2024 and conducted by an HLPC' ecologist with 6 years' field survey experience. Survey methods followed best practice guidance from the Mammal Society⁷.

All badger setts found on site were recorded. During the survey, the level of activity associated with badger hole/s was graded into one of three categories as described below:

- Well used – clear of any debris or vegetation, are obviously in regular use and may or may not have been excavated recently.
- Partially used – Not in regular use and have debris such as leaves and twigs in entrance or have moss or other plants growing around entrance. Partially used holes could be in regular use after a minimal amount of clearance.
- Appears disused – Do not appear to have been used for some time and are partially or completely blocked.

Setts were also classified according to the four recognised types according to the Mammal Society guidance¹, namely, Main Sett, Annexe Sett, Subsidiary Sett and Outlying Sett.

A thorough walkover survey was completed to check for the presence of badgers and the survey area included the proposed development site along with survey of wider greenspace where accessible. The survey area is shown in Figure 1. Key signs that were searched for included:

- sett entrances, e.g. entrances that are normally 25 to 35 cm in diameter and shaped like a 'D' on its side;
- large spoil heaps outside sett entrances;
- bedding outside sett entrances;
- badger footprints;
- badger paths;
- latrines;
- badger hairs on fences or bushes;
- scratching posts, and
- signs of digging for food.

Georeferenced photographs were taken of any setts found and all Badger activity was mapped.

3.10 Birds

Bird species identified at the time of survey were noted and nesting birds recorded as seen. An assessment of habitats was undertaken to determine the likely value to breeding and foraging birds.

3.11 Hazel Dormouse

An assessment of the habitats on the site for suitability to support hazel dormice *Muscardinus avellanarius* was undertaken.

3.12 Scoped Out

Survey for otter and water vole have been scoped out due to the lack of watercourse within the site or wider area.

⁷ Harris, S., Cresswell, P., & Jefferies, D (1989). The Mammal Society: Surveying Badgers.

4. DESK STUDY

4.1 Landscape Initiatives

Hampshire Biodiversity Information Centre (HBIC) were consulted to see if the site lay within any ecological landscape initiatives. No 'core areas' or 'corridors' were identified.

4.2 National character area

National Character Areas (NCA) divide England into 159 distinct natural areas. Each is defined by a unique combination of landscape, biodiversity, geodiversity, history, and cultural and economic activity. The National Character Area (NCA) that the site lies within has been identified using the British Government NCA webpage⁹. The survey area sits within the National Character Area 128, South Hampshire Lowlands. The NCA has considerable biodiversity interest. Southampton Water is internationally recognised for its importance for breeding and overwintering waterfowl and waders and for its wetland habitats such as mudflats and salt marshes. Three Natura 2000 designations cover parts of the area – Solent and Southampton Water Ramsar site, Solent and Southampton Water Special Protection Area and Solent Maritime Special Area of Conservation.

4.3 Nature conservation sites

Statutory and non-statutory nature conservation sites located in proximity to the survey area are summarised in Table 9.

Twenty-seven non-statutory sites were identified by HBIC. The sites within 1 km are highlighted in Table 9 and all sites within 2 km can be seen in Appendix 3.

Table 9: Summary of Nature Conservation Sites

Site Name	Designation	Proximity to the Survey Area (km)	Description
European Statutory Sites			
Solent & Isle of Wight lagoons	SAC	4.9km south	The lagoons show a range of salinities and substrates, ranging from soft mud to muddy sand with a high proportion of shingle, which support a diverse fauna including large populations of three notable species: the nationally rare Foxtail Stonewort <i>Lamprothamnium papulosum</i> the nationally scarce Lagoon Sand Shrimp <i>Gammarus insensibilis</i> and the nationally scarce starlet sea anemone <i>Nematostella vectensis</i> .
Solent Maritime	SAC	4.9km south	The site is the only one in the series to contain more than one physiographic sub-type of estuary and is the only cluster site. The Solent and its inlets are unique in Britain and Europe for their hydrographic regime of four tides each day, and for the complexity of the marine and estuarine habitats present within the area.
Portsmouth Harbour	SPA & Ramsar	6.2km southwest	Portsmouth Harbour has only a narrow connection to the sea via the Solent, and receives comparatively little fresh water, thus giving it an unusual hydrology. The site supports important numbers of wintering Dark-bellied Brent Goose <i>Branta b. bernicla</i> , which feed also in surrounding agricultural areas away from the SPA.

⁹ <https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles>

Chichester & Langstone Harbours	SPA & Ramsar	7km southeast	The two harbours are joined by a stretch of water that separates Hayling Island from the mainland. Tidal channels drain the basin and penetrate far inland. The mud-flats are rich in invertebrates and also support extensive beds of algae. The site is of particular significance for waterbirds, especially in migration periods and in winter. It also supports important colonies of breeding Common Tern <i>Sterna hirundo</i> .
Butser Hill	SAC	9.5km north	A large area of dry grassland steppes with the richest terricolous lichen flora of any chalk grassland site in England.
UK Statutory Sites			
No UK statutory designated sites were identified within 2 km of the survey area.			
Non-statutory Sites			
Park Wood, Havant	SINC	0.77 km north-east	No information provided.
Newlands Row & Plant Row	SINC	0.5 km south-west	No information provided.
Key: SINC: Site of Importance for Nature Conservation			

4.4 Habitats

Table 10 summarises known priority or notable habitats within a 1 km radius of the site.

Table 10: Summary of Priority/Notable Habitats

Habitat Type	Location of Nearest Record (km)
Coastal and Floodplain Grazing Marsh	0.57 west
Deciduous Woodland	0.86 south-west
Ancient & Semi-Natural Woodland	0.78 north-east
Traditional Orchard	0.8 km south-east

4.5 Protected / notable Species

Table 11 and the following text provide a summary of protected and notable species records within a 2 km radius of the study area. It should be noted that the absence of records should not be taken as confirmation that a species is absent from the search area.

Table 11: Summary of Protected/Notable Species Records

Species	No. of Records	Most Recent Record	Proximity of Nearest Record to Survey Area (km)	Legislation / Conservation Status
Mammals - Bats				

Species	No. of Records	Most Recent Record	Proximity of Nearest Record to Survey Area (km)	Legislation / Conservation Status
Serotine <i>Eptesicus serotinus</i>	1	2016	0.77 km south-east	WCA, HBAP, EU_Hab_4, HabRegs2
Whiskered bat <i>Myotis mystacinus</i>	1	2005	0.69 south-east	WCA, UKBAP, EU_Hab_4, HabRegs2
Whiskered bat <i>Myotis mystacinus</i> / Brandt's bat <i>Myotis brandtii</i>	1	2005	0.69 south-east	WCA, HabRegs2
Noctule <i>Nyctalus noctula</i>	4	2013	0.71 km south-west	WCA, NERC s.41, EU_Hab_4, HabRegs2, UKBAP
Unidentified bat <i>Pipistrelle</i> sp.	2	2011	0.82 km north-east	WCA, EU_Hab_4, HabRegs2, HBAP
Common Pipistrelle <i>Pipistrellus pipistrellus</i>	39	2016	0.69 km north-east	WCA, EU_Hab_4, HabRegs2, HBAP
Soprano Pipistrelle <i>Pipistrellus pygmaeus</i>	7	2016	0.47 km south-east	WCA, NERC s.41, UKBAP, EU_Hab_4, HabRegs2
Brown Long-Eared Bat <i>Plecotus auritus</i>	2	2013	0.45 km south-east	WCA, NERC s.41, UKBAP, EU_Hab_4, HabRegs2
Other Mammals				
Hedgehog <i>Erinaceus europaeus</i>	4	2007	0.45 km north	NERC s.41, UKBAP
Hazel Dormouse <i>Muscardinus avellanarius</i>	4	2012	0.37 km south-west	WCA, NERC s.41, UKBAP, HabRegs2, EU_Hab_4, HBAP, CI
Herpetofauna				
Great Crested Newt <i>Triturus cristatus</i>	2	2013	0.72 km south	WCA, NERC s.41, UKBAP, ECH4, HBAP
Slow Worm <i>Anguis fragilis</i>	2	2011	0.25 km north-west	WCA, NERC s.41, UKBAP
Birds				
Kingfisher <i>Alcedo atthis</i>	6	2016	0.11 km south-west	EU_Bird_1, WCA1i
Cetti's Warbler <i>Cettia cetti</i>	2	2016	2.0 km south	WCA1i, HBAP, CS
Peregrine <i>Falco peregrinus</i>	43	2016	Sensitive Location	WCA1i, EU_Bird_1, CR

Species	No. of Records	Most Recent Record	Proximity of Nearest Record to Survey Area (km)	Legislation / Conservation Status
Hobby <i>Falco subbuteo</i>	41	2016	Sensitive Location	WCA1i, HBAP, CI
Mediterranean Gull <i>Larus melanocephalus</i>	326	2016	0.03 km south	WCA1i, EU_Bird_1, HBAP, CR
Black-tailed Godwit <i>Limosa limosa</i>	2	2016	2.0 km south	RL-VU, WCA1i, HBAP, CI
Common Crossbill <i>Loxia curvirostra</i>	6	2015	0.58 km north-west	WCA1i, CS
Red Kite <i>Milvus milvus</i>	17	2016	0.11 km south-west	WCA1i, HBAP, CR
Whimbrel <i>Numenius phaeopus</i>	1	2003	0.9 km south-west	RL-VU, WCA1i,
Osprey <i>Pandion haliaetus</i>	1	2005	0.49 km north-west	WCA1i, EU_Bird_1
Black Redstart <i>Phoenicurus ochruros</i>	1	2015	0.75 km north-west	RL-VU, WCA1i, CR
Firecrest <i>Regulus ignicapilla</i>	1	2010	0.26 km east	WCA1i, HBAP, CS
Greenshank <i>Tringa nebularia</i>	1	2015	2.0 km south	WCA1i
Green Sandpiper <i>Tringa ochropus</i>	1	2015	0.12 km south-west	WCA1i
Redwing <i>Turdus iliacus</i>	26	2015	0.26 km east	RL-VU, WCA1i
Fieldfare <i>Turdus pilaris</i>	21	2016	On site (2015)	RL-VU, WCA1i
Barn Owl <i>Tyto alba</i>	2	2013	0.76 north-west	WCA1i
Hoopoe <i>Upupa epops</i>	1	2004	0.87 west	WCA1i

Key:

WCA1i: Wildlife and Countryside Act 1981 (Schedule 1 Part 1) - Birds which are protected by special penalties at all times.

HabRegs2: The Conservation (Natural Habitats, &c.) Regulations 2010 (Schedule 2) - European protected species of animals.

S41: Natural Environment and Rural Communities Act 2006

WCA5/9.4b: Wildlife and Countryside Act 1981 (Schedule 5 part 9.4b) - Animals which are protected from intentional disturbance while occupying a structure or place used for shelter or protection.

WCA5/9.5a: Wildlife and Countryside Act 1981 (Schedule 5.9.5a) - Animals which are protected from being sold, offered for sale or being held or transported for sale either live or dead, whole or part.

PBA: Protection of Badgers Act (1992) - protects badgers from taking, injuring, killing, cruel treatment, selling, possessing, marking and having their setts interfered with, subject to exceptions.

BAP: UK Biodiversity Action Plan Priority Species

Bern: Bern Convention on the Conservation of European Wildlife and Natural Habitats, Appendix 3 - Protected fauna species

Species	No. of Records	Most Recent Record	Proximity of Nearest Record to Survey Area (km)	Legislation / Conservation Status
RL-VU: IUCN Red List of Threatened Species – Vulnerable EU_Bird_1: Annex I of the Birds Directive CS: County Scarce CR: County Rare CI: County Interest EU_Hab_4: Annex IV of the Habitats Directive				

The local record centre also included multiple Birds of Conservation Concern Red List species within 2 km of the survey area. These were skylark *Alauda arvensis*, lapwing *Vanellus vanellus*, mistle thrush *Turdus viscivorus*, starling *Sturnus vulgaris*, woodcock *Scolopax rusticola*, yellow wagtail *Motacilla flava subsp. flavissima*, linnet *Linaria cannabina*, and yellowhammer *Emberiza citrinella*.

No positive records for the Solent Waders and Brent Goose Strategy 2020 were provided by HBIC within the site.

4.6 Invasive species

No invasive species were found on site during the survey. However, four records of invasive species (detailed in Schedule 9 of the Wildlife and Countryside Act (1981) as amended) were returned from the data consultation within 1 km of the site. These were grey squirrel *Sciurus carolinensis*, Himalayan balsam *Impatiens glandulifera*, montbretia *Crocodymia x crocosmifolia*, and Bar-headed Goose *Anser indicus*.

5. SURVEY RESULTS

5.1 Introduction

A Baseline Habitat Plan (Drawing PE0026-04), illustrating the location and extent of all habitat types recorded on site, is provided in Chapter 8.1 along with a summary of the condition assessment for each habitat type using the Statutory Biodiversity Metric Technical Annex I in Chapter 8.2. Detailed habitat descriptions are provided below.

5.2 Habitats

Table 12 details the types, extent and ecological condition of the habitats which were recorded on site during the field survey visit.

Table 12: Summary of Habitats Recorded on Site

Habitat	Area (ha) / Length (m)	Condition
Developed Land – Sealed Surface	2.54	N/A
Sparsely Vegetated Urban Land (Vacant/Derelict Land for BNG)	0.76	Moderate
Modified Grassland	0.02	Poor
Mixed Scrub	0.73	Poor
Native hedgerow	120	Poor-moderate

5.2.1 Developed Land – Sealed Surface (u1b)

The vast majority of the site is hardstanding from the previous development and associated car parking and infrastructure. Some vegetation has started to emerge through crevices in the hardstanding where it has deteriorated over time and through drainage vents in the ground. Sparse vegetation included saplings of rose *Rosa sp.*, sycamore *Acer pseudoplatanus*, hawthorn *Crataegus monogyna*, and rowan *Sorbus aucuparia*. Other species included baron brome *Anisantha sterilis*, forget-me-nots *Myosotis sp.*, oxeye daisy *Leucanthemum vulgare*, common ragwort *Senecio jacobaea*, scarlett pimpernel *Anagallis arvensis*, fleabane *Pulicaria dysenterica*, St John's wort *Hypericum perforatum*, weld *Reseda luteola*, opium poppy *Papaver somniferum*, red valerian *Valeriana rubra*, ivy-leaved toadflax *Cymbalaria muralis*, Yorkshire fog *Holcus lanatus*, cocks foot *Dactylis glomerata*, mullein *Verbascum thapsus*, and false oat grass *Arrhenatherum elatius*.

Plate 1: Developed Land – Sealed Surface (u1b)



5.2.2 Sparsely Vegetated Urban Land (u1f)

The vast majority of the site is hardstanding from the previous development and associated car parking and infrastructure. However, to the eastern extent of the site, previously developed land is present where succession has taken place, plant communities have established, and vegetation coverage is now between 10% and 50%. Vegetation included self-set birch *Betula pendula*, sycamore, and grey willow *Salix cinerea*. The ground is now permeable, and pools within the old development foundations were present at the time of survey, however, this was after a significant amount of rainfall in recent weeks. Further species included sedges *Carex* sp., bryophytes, oxeye daisy, common ragwort, black medick *Medicago lupulina*, st john's wort, weld, opium poppy, yellow wort *Blackstonia perfoliate*, forget-me-nots, cranesbill sp., bugle *Ajuga reptans*, fleabane, groundsel *Senecio vulgaris*, yarrow *Achillea millefolium*, meadow buttercup *Ranunculus acris*, and red fescue *Festuca rubra*.

Plate 2: Sparsely Vegetated Urban Land (u1f)



5.2.3 Modified Grassland (g4)

The site was comprised predominantly of developed land and sparsely vegetated urban land, however, there is a small patch of modified grassland present that is likely to have been amenity green space associated with the previous development. The grassland patch has since been left unmanaged and sward height at the time of survey was approximately 15 cm with no variation in height, and a considerable amount of bare ground is present. Species diversity was considered sufficient for modified grassland compared to higher distinctiveness grassland types. If left unmanaged for a long time it is likely that this section will also develop into scrub through encroachment. The sward was characterised by frequent perennial rye grass *Lolium perenne*. Herb species were limited to occasional broadleaved dock *Rumex obtusifolius*, willowherb *Epilobium* sp., creeping buttercup *Ranunculus repens*, hawkweeds *Hieracium* sp., herb robert *Geranium robertianum*, common vetch *Vicia sativa*, scarlett pimpernel, red clover *Trifolium pratense*, creeping thistle *Cirsium arvense*, and ribwort plantain *Plantago lanceolata*.

Plate 3: Modified Grassland (g4)



5.2.4 Mixed Scrub (h3h)

Site boundaries were dominated by a mosaic of mixed scrub with ruderal species from what appears to be unmanaged former amenity grassland. There are also patches of scrub within the middle of the site that have developed as result of the sites vacancy in recent years. Species included bramble, butterfly bush *Buddleja davidii*, elder, hawthorn, ivy, willow *Salix sp.*, sycamore saplings, field rose *Rosa arvensis*, cotoneaster *sp.*, dogwood *Cornus sanguinea*, oak *Quercus sp.*, blackthorn, and gorse. Ruderal species amongst the scrub and forming the ground flora layer included teasel *Dipsacus fullonum*, creeping cinquefoil *Potentilla reptans*, spear thistle *Cirsium vulgare*, common nettle *Urtica dioica*, common ragwort, herb robert, germander speedwell *Veronica chamaedrys*, wood avens *Geum urbanum*, cranesbill *Geranium sp.*, and forget-me-nots. There is a red brick-built structure nestled within the scrub area to the north.

Plate 4: Mixed Scrub (h3h)



5.2.5 Native Hedgerows

Table 13: Summary of Hedgerows Recorded on Site

Hedgerow Ref.	Hedgerow Type	Length (m)	Description	Condition
H1	Native hedgerow	65	Unmanaged hedgerow but with evidence of some historical management. Previously a roadside hedgerow for the car park. c. 1 m high and 1 m wide. Hawthorn dominant with some, field maple <i>Acer campestre</i> , ivy <i>Hedera helix</i> , gorse <i>Ulex europaeus</i> , rose <i>Rosa</i> sp., bramble <i>Rubus fruticosus</i> , viburnum sp., and barberry <i>Berberis vulgaris</i> .	Poor
H2	Native Hedgerow	55	Unmanaged hedgerow c. 3 m high and 1.5 m wide. Hawthorn dominant with some ivy <i>Hedera helix</i> , elder <i>Sambucus nigra</i> , sycamore, blackthorn <i>Prunus spinosa</i> , and viburnum sp.	Moderate

5.3 Great Crested Newt

The habitats on site were considered largely unsuitable for foraging and sheltering opportunities for great crested newt. The scrub, hedgerows and grassland patches provide some very limited optimal terrestrial habitat for the species if present. Eight ponds were identified within 500m of the site from aerial mapping and all ponds were off-site.

Table 14: HSI results

Pond	Suitability for Great Crested Newt
P1	Below Average
P2	Below Average
P3	Below Average
P4	Average
P5	Average
P6	Below Average
P7	Good
P8	Good

The results from the water environmental DNA (eDNA) sampling in 2018 did not detect great crested newt DNA in P2, P3, P4, P5 or P6 (see Appendix 4). No eDNA sample was taken from P1 due to health and safety concerns, however, it is hard engineered with steep concrete sides and so it considered unsuitable for newts. The ponds were subject to water environmental DNA (eDNA) sampling again in 2023, results for both years of survey can be seen in Table 15.

Table 15: Water environmental DNA (eDNA) results.

Pond Number	2018	2023
P1	Not accessed – H&S	Not accessed – H&S

Pond Number	2018	2023
P2	Negative	Not accessed
P3	Negative	Negative
P4	Negative	Negative
P5	Negative	Negative
P6	Negative	Negative
P7	Not identified in previous assessment	Negative
P8	Not identified in previous assessment	Negative

5.4 Reptiles

The habitats on site were considered sub-optimal for reptiles as the site lacks the complex habitat structure that is typically required by reptiles for shelter, foraging and basking. Hedgerows and scrub patches provide some limited suitable habitat and an ecological corridor for dispersal. Some more limited habitat is present where urban debris and rubble has built up around the derelict site. Although the habitats on site provide some limited opportunities for reptiles, the site is surrounded by roads in an urbanised environment with very limited suitable habitat in the wider area. In addition, a full presence and likely absence survey was undertaken in 2018 did not identify the presence of reptiles on site.

5.5 Bats

Two trees are to be felled facilitate the development, this was assessed by a licenced bat ecologist and considered to have moderate potential to support roosting bats and two further nocturnal surveys was deemed necessary. These were undertaken in July and August 2024 and no roosts were identified. If the trees have not been felled within 12 months of this survey effort, they will need to be re-assessed and repeat surveys undertaken.

The results of the automated static bat detector surveys can be seen in Tables 16, 17, and 18 below. Due to a technical fault with the equipment, no data was collected in June 2024.

Automated Static Bat Detector Data Summary – May 2024

Table 16: Summary of May Static Data

Date	Location	No. of Species	Total No. of bat passes	Average passes per night
22.05.24-27.05.24	S1	4	144	36
	S2	5	263	52.6
Total			407	
Species	Total number of passes			Total number of passes (% total)
	S1	S2	Total	
Common pipistrelle	131	243	374	91.89
Soprano pipistrelle	4	12	16	3.93
Nathusius's pipistrelle	8	5	13	3.19
Serotine	1	0	1	0.25
Leisler's	0	1	1	0.25
Noctule	0	2	2	0.49

Automated Static Bat Detector Data Summary – July 2024

Table 17: Summary of July Static Data

Date	Location	No. of Species	Total No. of bat passes	Average passes per night
15.07.24-19.07.24	S1	6	684	114
	S2	7	2,454	350.57
Total			3,138	
Species	Total number of passes			Total number of passes (% total)
	S1	S2	Total	
Common pipistrelle	585	2,378	2,963	94.42
Brown long eared	4	3	7	0.22
Soprano pipistrelle	53	45	98	3.12
Nathusius's pipistrelle	6	18	24	0.76
Leisler's	35	4	39	1.24
Noctule	1	2	3	0.10
Serotine	0	4	4	0.13

Automated Static Bat Detector Data Summary – August 2024

Table 18: Summary of August Static Data

Date	Location	No. of Species	Total No. of bat passes	Average passes per night
08.08.24-12.08.24	S1	7	2033	290.43
	S2	8	2267	283.38
Total			4300	
Species	Total number of passes			Total number of passes (% total)
	S1	S2	Total	
Common pipistrelle	1967	2103	4070	94.65
Brown long eared	0	2	2	0.05
Soprano pipistrelle	44	55	99	2.30
Nathusius's pipistrelle	7	9	16	0.37
Leisler's	4	43	47	1.09
Noctule	0	30	30	0.70
Serotine	7	22	29	0.67
Myotis sp.	4	3	7	0.16

The static bat detector surveys recorded seven species of bat: common pipistrelle, soprano pipistrelle, Nathusius's pipistrelle, brown long-eared, Noctule, Serotine, Leisler's, and myotis species.

The highest level of bat activity recorded was associated with the western hedgerow boundary. These provide foraging habitat as well as navigational pathways for commuting bats. Common pipistrelle was the dominant species recorded throughout the static survey period. Soprano pipistrelle, and Noctule/Serotine/Leisler's were also recorded moderately frequent. Brown long eared, and Myotis sp., were identified infrequently during the survey period. Due to the low numbers of recordings of this species they would not be considered to regularly use the site.

5.6 Badgers

No evidence of the presence of badger was found during the survey. The habitats on site provide suitable foraging and connecting habitat for badger due to mixed scrub. Ecological connectivity to wider suitable habitat is limited due to the urban nature of the site.

5.7 Birds

The habitats on site were considered suitable for nesting birds due to the presence of hedgerows and

mature trees within that provide sufficient cover and structure. However, due to the urbanised setting of the wider area and disturbance from adjacent supermarkets and roads, the site was considered suitable for urban fringe species only. No species of particular note were identified during the survey and no further surveys were recommended.

5.8 Hedgehogs

The habitats on site provide foraging opportunities for hedgehog. The mixed scrub and hedgerows on site, and the wider site environment may provide further opportunities. However, the site is urbanised and surrounded by roads and commercial / industrial development. Although it is unlikely for this species to be present on site, precautionary measures are provided in Chapter 7.

5.9 Invasive species

No invasive species were recorded during the site survey.

6. EVALUATION

6.1 Landscape Initiatives

Hampshire Biodiversity Information Centre were consulted to see if the site lay within any ecological landscape initiatives. No 'core areas' or 'corridors' were identified. In addition, the Biodiversity Action Plan for Hampshire was consulted, which highlights the priority species and habitat for the area and none of these were identified within the site boundaries. No local nature recovery strategy (LNRS) has been published for the area.

6.2 Nature conservation sites

European Statutory Sites

Five internationally statutory designated sites for nature conservation were recorded within 10km of the site. Three Special Areas of Conservation (SAC) and two sites that were designated as Ramsar and Special Protection Areas (SPA). The habitats on site are not considered likely to support bird species associated with Portsmouth Harbour SPA/Ramsar and Chichester and Langstone Harbours SPA/Ramsar located over 5km from the site. The site is isolated from the wider landscape with major roads around the site and commercial development adjacent to the site, associated with Waterloo Park.

UK Statutory Sites

No UK statutory sites were identified from the desk study within a 2 km radius of the site.

Non-Statutory Sites

Twenty-seven Sites of Importance for Nature Conservation (SINCs) were present within 2 km of the site, with the closest Newlands Row and Plant Row SINC located 0.5 km south-west of the site. Given the localised scale of the development, the lack of ecological connectivity and the intervening distance between the SINC and the proposed development, the non-statutory site is not a material consideration for the proposed development. In addition, the proposals are for commercial use and not residential and as such no residential pressure on these sites is anticipated to occur. Given the distance of the proposed development from identified statutorily and non-statutorily designated sites for nature conservation and the scale of the proposed development, it is not anticipated that any significant impacts to these sites will result from the proposed development. No further mitigation, enhancement or monitoring measures are considered to be required.

6.3 Habitats

An evaluation of the importance of each habitat recorded on site is summarised in Table 19. A material consideration is an ecological feature that by virtue of its legal status, its inclusion in any national policy or plan, rarity or contribution to local ecological networks, is worthy of further consideration in the planning system.

Table 19: Preliminary evaluation of importance of each habitat on site.

Habitat Type	Material Consideration?	Rationale
Developed Land – Sealed Surface	No	This habitat does not have sufficient diversity and structure to provide conservation value. It is a common, widespread habitat and it can easily be replaced.

Habitat Type	Material Consideration?	Rationale
Sparsely Vegetated Urban Land	No	This habitat does not have sufficient diversity and structure to provide conservation value. It is a common, widespread habitat that can easily be replaced.
Modified Grassland	No	This habitat does not have sufficient diversity and structure to provide conservation value. It is a common, widespread habitat that can easily be replaced.
Mixed Scrub	Yes	This habitat does have sufficient diversity and structure to provide conservation value and ecological value to a variety of fauna, as well as promoting floristic diversity. Should be replaced on a like for like basis.
Native hedgerow	Yes	The on-site hedgerows were composed of at least 80% native species and were over 20 m long, and they qualify as Habitats of Principal Importance in accordance with the NERC Act 2006. The hedgerows provide connectivity along the boundaries of the site and provide opportunities for wildlife.

6.4 Biodiversity Metric Assessment – Baseline Value

A baseline value of the habitats on site has been calculated using the Statutory Metric calculation. Once the development design is confirmed, a biodiversity net gain calculation will be carried out. The baseline value of the site is 6.00 habitat units and 0.35 hedgerow units. The proposed development will need to generate the necessary habitat and hedgerow units in order to achieve the mandatory 10% net gain required in accordance with the Environment Act 2021.

On-site baseline	<i>Habitat units</i>	6.00
	<i>Hedgerow units</i>	0.35
	<i>Watercourse units</i>	0.00

6.5 Protected / notable species

An evaluation of the potential presence of protected / notable species on site is summarised in Table 20.

Table 20: Preliminary Evaluation of Species

Species/Species Group	Material Consideration?	Rationale
GCN	No	Two records of GCN from 2013 were identified by the HBIC, located 0.72 km from the site boundary. Eight ponds were identified within 500m of the site from aerial mapping and all ponds were off-site. Ponds were subject to environmental DNA analysis (eDNA) in 2018 and 2023 and returned negative results, indicating an absence of this species in the nearby waterbodies. The site is urbanised and surrounded by roads and commercial / industrial development which reducing suitability for ecological connectivity to further suitable terrestrial habitat. Therefore, GCN are not considered to be a constraint with respect to the proposed development and no further mitigation measures are recommended.

Species/Species Group	Material Consideration?	Rationale
Bats	Yes	The hedgerows and mixed scrub habitats on-site provide foraging and commuting opportunities for bats. There are records of at least seven bat species within a 2 km radius of the site. Several bat species are Species of Principal Importance, and all afford full protection under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended). Brown long eared, and myotis sp. were identified infrequently during the survey period. Due to the low numbers of recordings of this species they would not be considered to regularly use the site. However, a sensitive lighting strategy should be implemented to limit the impact to ecological corridors and maintain connectivity to the wider environment. Two trees are to be felled facilitate the development, this was assessed by a licenced bat ecologist and considered to have moderate potential to support roosting bats and two further nocturnal surveys was deemed necessary. These were undertaken in July and August 2024 and no roosts were identified. If the trees have not been felled within 12 months of this survey effort, they will need to be re-assessed and repeat surveys undertaken.
Reptiles	Yes	Two records of slow worm from 2011 were identified by HBIC, with the closest record located 0.25 km from the site. Although the habitats on site provide some opportunities for reptiles including scrub and rubble piles, the site is surrounded by roads in an urbanised environment with very limited suitable habitat in the wider area. A survey in 2018 did not identify the presence of reptiles on site. The presence of reptiles cannot be ruled out and as such, a precautionary measure is detailed in Chapter 7.
Badger	Yes	No records of badger were returned from the data consultation within a 2 km radius of the site. No evidence of the presence of badger was found during the survey. The habitats on site provide some limited suitability in the mixed scrub patches and hedgerows on-site. There is some connectivity with suitable off-site habitat in the form of grassland, scrub, and woodland to the south. As badgers are a highly mobile species, their presence cannot be ruled out.
Hedgehog	Yes	Four records of hedgehog were returned from the data consultation, with the closest record location c. 0.45 km north and dated 2007. The hedgerows and scrub on site may provide commuting and foraging opportunities for hedgehog, however the site is urbanised and surrounded by roads and commercial / industrial development. Although it is unlikely for this species to be present on site, precautionary measures are provided in Chapter 7.

Species/Species Group	Material Consideration?	Rationale
Birds	Yes	Numerous records of bird species were returned within 2 km of the site. The scrub and hedgerow habitat on site was considered to provide nesting opportunities for urban fringe birds. Due to the disturbed nature of the site in an urbanised setting, it is not considered suitable for ground nesting species.

6.6 Invasive species

Four records of invasive species (detailed in Schedule 9 of the Wildlife and Countryside Act (1981) as amended) were returned from the data consultation within 1 km of the site. These were grey squirrel *Sciurus carolinensis*, Himalayan balsam *Impatiens glandulifera*, montbretia *Crocsmia x crocosmifolia*, and Bar-headed Goose *Anser indicus*. However, no invasive species were found on site during the survey and further consideration regarding invasive species is not considered necessary in this report.

7. RECOMMENDATIONS

7.1 Summary of Proposals

The current proposals and description of the application is: "Outline planning application with All Matters Reserved Apart from Access for Development within Class E (Light Industrial, Retail, Café and Restaurants, Leisure / Gym), B2, B8, and B8 Trade Counters".

The current proposals for the site based on the following set of drawings by HNW Architects, June 2024:

- 24018-HNW-XX-XX-RP-A-0500-P03 Design and Access Statement
- 24018-HNW-ZZ-ZZ-DR-A-1000-P01 Site Location Plan
- 24018-HNW-ZZ-ZZ-DR-A-2100 Proposed Site Plan – Use
- 24018-HNW-ZZ-ZZ-DR-A-2101 Proposed Site Plan – Access

7.2 Construction Phase

The following activities are likely to be associated with the proposed development during the construction phase.

- Site clearance and ground preparation;
- Use and movement of heavy goods vehicles and machinery;
- Storage of plant, materials and waste; and,
- Presence of and movement of site personnel.
- Operational Phase

The following activities are likely to be associated with the operational phase of the proposed development.

- Permanent siting of buildings, structures and roads;
- Frequent movement of cars and other forms of transportation;
- Use of lighting associated with roads and buildings;
- Presence of and movement of residents; and,
- Maintenance of landscaping.

The findings of this report are summarised in Table 21.

Table 21: Summary of Potential Impacts and Recommendations

Ecological Receptor	Summary of Potential Impacts	Recommendations
General	In the absence of a detailed landscaping strategy, the baseline value of the habitats on site only can be found in the Statutory Metric calculation.	The mitigation hierarchy should be followed with consideration given to retain and enhance the more notable habitats on site such as the hedgerows, and mixed scrub habitats. The mixed scrub, if lost, should be replaced on a like for like or better basis to meet the trading rules associated with the metric. If 10% net gain cannot be achieved within the red line boundary, the development will need to be offset through a suitable off-site location and possibly through a third-party provider. Priority will be given to offsetting sites within proximity to the development within the same local

Ecological Receptor	Summary of Potential Impacts	Recommendations
		authority area or National Character Area.
Bats	Fragmentation of habitat, disturbance of commuting routes.	The site has habitat that is likely to support commuting and foraging bats, in particular the hedgerows along the boundaries. Automated static detector surveys are underway monthly from May to October, inclusive in accordance with the latest survey guidance¹². May to August data has been collected to date. Brown long eared, and lesser horseshoe were identified infrequently during the survey period. Due to the low numbers of recordings of this species they would not be considered to regularly use the site. However, a sensitive lighting strategy should be implemented to limit the impact to ecological corridors and maintain connectivity to the wider environment. To minimise disturbances to foraging and commuting bats, artificial lighting introduced during the construction works should be fitted with a directional cowl. Lighting should then be positioned in such a way that avoids unnecessary light spill. Lighting outputs should be maintained at, or below, 1lux which is equivalent to twilight conditions, where practicable. Any additional permanent lighting should be kept to a minimum and be sensitive to local bat foraging and commuting activity and avoid unnecessary light spill. Design of the lighting scheme should follow the principles within the Institution of Lighting Professionals guidance (ILP, 2023¹³) where possible within the context of the existing lit environment. Two trees are to be felled facilitate the development, this was assessed by a licenced bat ecologist and considered to have moderate potential to support roosting bats and two further nocturnal surveys was deemed necessary. These were undertaken in July and August 2024 and no roosts were identified. If the trees have not been felled within 12 months of this survey effort, they will need to be re-assessed and repeat surveys undertaken. The hedgerows on site should be retained and enhanced where possible to maintain ecological connectivity. New hedgerow should be proposed, and buffer zones put in place to enhance the biodiversity level of the site. It is recommended that a minimum of 6 no. bat boxes are installed on retained mature trees or incorporated into the new structures of the proposed development. A detailed plan of the proposed make, model and positions of the boxes will be produced and agreed with the LPA. It should be appreciated that bats only require small

¹² Bat Surveys for Professional Ecologists – Good Practice Guidelines (4th Edition). Bat Conservation Trust, 2023.

¹³ ILP (2023). Guidance Note 08/23: Bats and artificial lighting at night. Institute of Lighting Professionals.

Ecological Receptor	Summary of Potential Impacts	Recommendations
		cavities for roosting and very small roost entry gaps. Bats have multiple roost sites and almost any structure/tree with suitable crevices has the potential to be utilised opportunistically by an individual bat. Should a bat be discovered during works, works in that area should cease immediately and a licensed bat ecologist consulted for advice.
Hedgehogs	Loss of foraging and commuting habitat. Potential incidental trapping causing death.	General good working practices in relation to mammals should be followed at all times during construction. This includes the covering of excavations over night or providing a suitable means for animals to escape to prevent trapping. Should a hedgehog be found, it should be moved using a gloved hand to a place of safety and shelter. Any new boundary treatments and garden fences should include a c. 13cm x 13cm gap to allow hedgehogs to pass through. Boundary treatments should allow adequate gaps to allow hedgehog to move across the site. These can be marked with signs so that they are not blocked off in the future (https://www.hedgehogstreet.org/help-hedgehogs/link-your-garden/). Consideration should be given to installing 'bug hotels and hedgehog boxes within the final landscape design.
Birds	Vegetation clearance has the potential to disturb nesting birds.	It is advised to complete any vegetation clearance outside of the breeding bird season of March to August (inclusive). Clearance within this period should be preceded by a nesting bird check conducted by an ecologist. Any active nests would need to remain unaffected until all chicks have fledged. Integral sparrow terraces and bird boxes are also recommended. A pre-commencement survey visit should be undertaken to check for ground-nesting birds. It is recommended that the new residential dwellings are designed to include integrated bird boxes on each suitable structure and/or installed on retained mature trees. A detailed plan of the proposed make, model and positions of the nest boxes will be produced and agreed with the LPA.
Reptiles and Amphibians	Vegetation clearance has the potential to cause injury or harm.	Due to the lack of suitable terrestrial habitat on site, and negative eDNA results in surrounding ponds, GCN are not considered to be a constraint with respect to the proposed development and no further mitigation measures are recommended. Some very limited suitable habitat is present on site. Further mitigation measures are recommended during the construction phases of the proposed development by means of Reptile and Amphibian Method Statement (RAMS) or agreed similar and secured via the appropriate planning obligation.

Ecological Receptor	Summary of Potential Impacts	Recommendations
		The creation of hibernacula in appropriate parts of the site at the final design stage, such as surrounding the new structure, should be considered for the benefit of the local population of amphibians and reptiles.
Badger	Loss of foraging and commuting habitat. Potential incidental trapping causing death. Sett destruction.	No evidence of badger was found during the survey however as they are a very mobile species, it is recommended that a pre-commencement check for any new setts or signs of badger activity is conducted prior to works commencing. The pre-commencement check should be carried out by a suitably qualified ecologist. A precautionary approach should be adopted during the construction phase. In order to prevent any badger (or other small mammal) becoming trapped within any footings/trenches these should be securely covered where possible or profiled to allow an escape route from any such trench within the development site. If this is not feasible, sturdy wooden planks should be placed within each trench at the end of each working day, to provide a ramp by which trapped animals may escape. Any trenches/pits will be inspected each morning to ensure badgers or other mammals have not become trapped overnight. Should a badger become trapped in a trench it will likely attempt to dig itself into the side of the trench, forming a temporary sett. Should a trapped badger be encountered, a suitably qualified ecologist will be contacted immediately for further advice. Any open drainage or pipework with a diameter of 150 mm or above should be capped at the end of each day and secured to prevent access to badger. The storage of any chemicals at the site will be contained in such a way that they cannot be accessed or knocked over if investigated by badgers or other mammals. The site manager will ensure the above methods are carried out at the end of each works day until the completion of all ground works are complete. In the unlikely event that a badger is seen or suspected to be on site, works must stop immediately, and a suitably qualified ecologist consulted.

8. DRAWINGS & CONDITION ASSESSMENT

8.1 Drawing PE0026-04: Baseline Habitat Plan



Site Name	Eletra Avenue, Waterlooville	Drawn By	AL
SS	Hargreaves Properties Ltd	Checked By	SS
Drawing	UK Habitat Classification	Drawing No	PE0026 - 04 Rev 1
Project No	PE0026	Date	29.08.2024

8.2 Target Notes

TN1	Brick built structure nestled amongst the scrub.
TN2	Spoil mound of old rubble.
TN3	Trees with BRP that were surveyed in 2024.

8.3 Condition Assessment of Baseline Habitats

Non-linear Habitats		Condition Sheet Criteria Score														
UKHab Habitat	Condition Sheet Used	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	Total Score	Condition Assessment
Developed land; sealed surface	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N/A
Vacant/Derelict Land (SVUL in UKHAB)	Urban	N	Y	Y	-	-	-	-	-	-	-	-	-	-	2	Moderate
Modified Grassland	Grassland (low distinctiveness)	F	F	P	F	F	P	P	-	-	-	-	-	-	3 (failed criterion A)	Poor
Mixed Scrub	Scrub	P	F	P	F	F	-	-	-	-	-	-	-	-	2	Poor
Key: P=Pass, F=Fail																

Linear Habitats				Condition Sheet Criteria Score								
Ref	UK Hab Habitat	A1	A2	B1	B2	C1	C2	D1	D2	E1 *	E2 *	Condition Assessment
H1	Native hedgerow	F	F	P	F	F	F	P	F	-	-	Poor
H2	Native hedgerow	P	P	P	P	F	F	P	P	-	-	Moderate

9. APPENDIX 1: General Legislation

General Biodiversity Legislation and Policy

“The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (the Habitats Regulations 2019)”.

The Habitats Regulations 2017 (as amended) transposed the land and marine aspects of the Habitats Directive (Council Directive 92/43/EEC) and certain elements of the Wild Birds Directive (Directive 2009/147/EC) (known as the Nature Directives) into English and Welsh law. Changes have been made to parts of the Habitats Regulations 2017 so that they operate effectively from 1 January 2021. The changes are made by the Habitats Regulations 2019, which transfer functions from the European Commission to the appropriate authorities in England and Wales.

All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

The obligations of a competent authority in the 2017 Regulations for the protection of sites or species do not change. A competent authority is a public body, statutory undertaker, minister or department of government, or anyone holding public office.

The Habitats Regulations 2019 have created a ‘National Site Network’ on land and at sea, including both the inshore and offshore marine areas in the UK. The National Site Network includes:

- Existing Special Areas of Conservation (SACs), which are designated due to their importance to the habitats and species listed in Annexes I and II of the Habitats Directive;
- Existing Special Protection Areas (SPAs), which are designated due to their importance for wild birds in accordance with the Wild Birds Directive; and,
- New SACs and SPAs designated under these Regulations.

SACs and SPAs in the UK no longer form part of the European Union’s Natura 2000 ecological network. Any references to Natura 2000 in the 2017 Regulations and in guidance now refers to the new National Site Network. However, guidance provided by Freeths (2020)⁵ recommends that SACs and SPAs can continue to be referred to as “European sites” / “European marine sites”.

Designated Wetlands of International Importance (known as Ramsar sites) do not form part of the National Site Network. Many Ramsar sites overlap with SACs and SPAs and may be designated for the same or different species and habitats. All Ramsar sites remain protected in the same way as SACs and SPAs.

The 2019 Regulations establish management objectives for the National Site Network. The network objectives are to:

⁵ Freeths (2020). *The Habitats Regulations Assessment regime after 31 December 2020 – how will it look?* Available: <https://www.freeths.co.uk/2020/10/22/the-habitats-regulations-assessment-regime-after-31-december-2020-how-will-it-look/?cmpredirect>

- Maintain or, where appropriate, restore habitats and species listed in Annexes I and II of the Habitats Directive to a favourable conservation status; and,
- Contribute to ensuring, in their area of distribution, the survival and reproduction of wild birds and securing compliance with the overarching aims of the Wild Birds Directive.

The appropriate authorities must also have regard to the:

- Importance of protected sites;
- Coherence of the National Site Network; and,
- Threats of degradation or destruction (including deterioration and disturbance of protected features) on SPAs and SACs.

The network objectives contribute to the conservation of UK habitats and species that are also of pan-European importance, and to the achievement of their favourable conservation status within the UK.

9.1 The Wildlife and Countryside Act (WCA) 1981 (as amended)

The WCA, as amended, consolidates and amends pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Habitat Regulations 2017 and the Habitats Regulations 2019, offering protection to a wider range of species. The Act also provides for the designation and protection of national conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSIs).

Schedules of the act provide lists of protected species, both flora and fauna, and detail the possible offences that apply to these species.

9.2 The Countryside and Rights of Way (CROW) Act 2000

The CROW Act, introduced in England and Wales in 2000, amends and strengthens existing wildlife legislation detailed in the WCA. It places a duty on government departments and the National Assembly for Wales to have regard for biodiversity, and provides increased powers for the protection and maintenance of SSSIs. The Act also contains lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

9.3 The Natural Environment and Rural Communities (NERC) Act 2006

Section 40 of the NERC Act places a duty upon all local authorities and public bodies in England and Wales to promote and enhance biodiversity in all of their functions. Sections 41 (England) and 42 (Wales) list habitats and species of principal importance to the conservation of biodiversity. These lists superseded Section 74 of the CROW Act 2000.

9.4 Species and Habitats of Material Consideration for Planning in England

Previous planning policy (and some supporting guidance which is still current, e.g. ODPM Circular 06/2005, now under revision), refers to UK BAP habitats and species as being a material consideration in the planning process. Equally many local plans refer to BAP priority habitats and species. Both remain as material considerations in the planning process but such habitats and species are now described as Species and Habitats of Principal Importance for Conservation in England, or simply priority habitats and priority species under the UK Post-2010 Biodiversity Framework. The list of habitats and species remains

unchanged and is still derived from Section 41 list of the Natural Environmental and Rural Communities (NERC) Act 2006. As was previously the case when it was a BAP priority species hen harrier continues to be regarded as a priority species although it does not appear on the Section 41 list.

9.5 National Planning Policy Framework and Practice Guidance

In July 2021, the National Planning Policy Framework (NPPF) was updated, replacing the previous framework published in 2012 and revised in 2018 and 2019. A presumption towards sustainable development is at the heart of the NPPF. This presumption does not apply however where developments require appropriate assessment under the Birds or Habitats Directives.

Chapter 15, on conserving and enhancing the natural environment, sets out how the planning system should contribute to and enhance the natural and local environment by:

- protecting and enhancing existing sites of biodiversity value;
- minimising impacts on and providing net gains for biodiversity; and,
- establishing coherent ecological networks.

If a proposed development would result in significant harm to the natural environment which cannot be avoided (through the use of an alternative site with less harmful impacts), mitigated or compensated for (as a last resort) then planning permission should be refused. With respect to development on land within or outside of a Site of Special Scientific Interest (SSSI) which is likely to have an adverse effect (either alone or in-combination with other developments) would only be permitted where the benefits of the proposed development clearly outweigh the impacts on the SSSI itself, and the wider network of SSSIs. Development resulting in the loss of deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused unless there are wholly exceptional reasons for the development, and a suitable compensation strategy is provided.

Chapter 15 identifies that development whose primary objective is to conserve or enhance biodiversity should be supported and opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature.

Chapter 11, making effective use of the land, sets out how the planning system should promote use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. Substantial weight should be given to the value of using suitable brownfield land within settlements for homes and other identified needs. Opportunities for achieving net environmental gains, including new habitat creation, are encouraged.

In March 2014 the Department for Communities and Local Government released guidance to support the National Planning Policy Framework (NPPF), known as the National Planning Practice Guidance (NPPG). This has been produced to provide guidance for planners and communities which will help deliver high quality development and sustainable growth in England.

The guidance includes a section entitled 'Natural Environment: Biodiversity, geodiversity and ecosystems and green infrastructure', which was updated in July 2019. This document sets out information with respect to the following:

- the statutory basis for seeking to conserve and enhance biodiversity;

- the local planning authority's requirements for planning for biodiversity;
- what local ecological networks are and how to identify and map them;
- how plan-making bodies identify and safeguard Local Wildlife Sites, including Standard Criteria for Local Wildlife Sites;
- the sources of ecological evidence;
- the legal obligations on local planning authorities and developers regarding statutory designated sites and protected species;
- definition of green infrastructure;
- where biodiversity should be taken into account in preparing a planning application;
- how policy should be applied to avoid, mitigate or compensate for significant harm to biodiversity and how mitigation and compensation measures can be ensured;
- definitions of biodiversity net gain including information on how it can be achieved and assessed; and,
- the consideration of ancient woodlands and veteran trees in planning decisions and how potential impacts can be assessed.

The NPPG July 2019 issue also includes a section entitled 'Appropriate assessment: Guidance on the use of Habitats Regulations Assessment' which provides information in relation to Habitats Regulations Assessment processes, contents and approaches in light of case law. This guidance will be relevant to those projects and plans which have the potential to impact on European Sites and European Offshore Marine Sites identified under the Conservation of Habitats and Species Regulations 2017 (as amended).

10. APPENDIX 2: Species-specific legislation

10.1 Bats

Bats and the places they use for shelter or protection (i.e. roosts) receive legal protection under the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017, states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Changes have been made to parts of the Habitats Regulations 2017 so that they operate effectively from 1st January 2021. The changes are made by the Habitats Regulations 2019, which transfer functions from the European Commission to the appropriate authorities in England and Wales.

All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

The obligations of a competent authority in the 2017 Regulations for the protection of species do not change. A competent authority is a public body, statutory undertaker, minister or department of government, or anyone holding public office.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, or *obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to intentionally or recklessly* disturb any protected species while it is occupying a structure or place which it uses for shelter or protection.

*Reckless offences were added by the Countryside and Rights of Way (CROW) Act 2000.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

The reader should refer to the original legislation for the definitive interpretation.

The following bat species are Species of Principal Importance for Nature Conservation in England: barbastelle bat *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *Rhinolophus hipposideros*. Species of Principal Importance for Nature Conservation in England are material considerations in the planning process. The list of species is derived from Section 41 list of the Natural Environmental and Rural Communities (NERC) Act 2006.

10.2 Hedgehog

Hedgehogs receive some protection under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended); this section of the Act lists animals which may not be killed or taken by certain methods, namely traps and nets, poisons, automatic weapons, electrical devices, smokes/gases and various others. Humane trapping for research purposes requires a licence.

Hedgehogs are a Species of Principal Importance for Nature Conservation in England and are thus capable of being material considerations in the planning process.

10.3 Nesting Birds

The Conservation of Habitats and Species Regulations 2017, (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019) places a duty on public bodies to take measures to preserve, maintain and re-establish habitat for wild birds.

Nesting and nest building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended).

Subject to the provisions of the act, if any person intentionally:

- kills, injures or takes any wild bird;
- takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or
- takes or destroys an egg of any wild bird, he shall be guilty of an offence.

Some species (listed in Schedule 1 of the WCA) are protected by special penalties. Subject to the provisions of the act, if any person intentionally or recklessly:

- disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
- disturbs dependent young of such a bird, he shall be guilty of an offence.

Several bird species are Species of Principal Importance for Nature Conservation in England, making them capable of being material considerations in the planning process.

10.4 Badger

Badgers and their setts are protected under the Protection of Badgers Act 1992. The Protection of Badgers Act 1992 is based primarily on the need to protect badgers from baiting and deliberate harm or injury, badgers are not protected for conservation reasons. The following are criminal offences:

- To intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it.
- To wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so.

A badger sett is defined in the legislation as:

- 'Any structure or place that displays signs indicating current use by a badger'.

'Current use' is not synonymous with current occupation and a sett is defined as such (and thus protected) as long as signs of current usage are present. Therefore, a sett is protected until such a time as the field signs deteriorate to such an extent that they no longer indicate 'current usage'.

Badger sett interference can result from a multitude of operations including excavation and coring, even if there is no direct damage to the sett, such as through the disturbance of badgers whilst occupying the sett. Any intentional or reckless work that results in the interference of badger setts is illegal without a licence from Natural England. In England a licence must be obtained from Natural England before any interference with a badger sett occurs.

The reader should refer to the original legislation for the definitive interpretation.

10.5 Common Amphibians

Common frogs, common toad, smooth newt and palmate newt are protected in Britain under Schedule 5 of the Wildlife and Countryside Act (1981, as amended) with respect to sale only. They are also listed under Annex III of the Bern Convention 1979. Any exploitation of wild fauna specified in Appendix III shall be regulated in order to keep the populations out of danger. The convention seeks to prohibit the use of all indiscriminate means of capture and killing and the use of all means capable of causing local disappearance of, or serious disturbance to, populations of a species.

Common toad is listed as a Species of Principal Importance for Nature Conservation in England.

10.6 Great Crested Newts

Great crested newts (GCN) and the places they use for shelter or protection receive legal protection under the Conservation of Habitats and Species Regulations 2017, (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that GCN, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017, states that a person commits an offence if they:

- deliberately capture, injure or kill a GCN;
- deliberately disturb GCN;
- deliberately take or destroy eggs of a GCN; or
- damage or destroy a GCN breeding site or resting place.

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead GCN, part of a GCN or anything derived from GCN, which has been unlawfully taken from the wild. This legislation applies to all life stages of GCN.

Changes have been made to parts of the Habitats Regulations 2017 so that they operate effectively from 1st January 2021. The changes are made by the Habitats Regulations 2019, which transfer functions from the European Commission to the appropriate authorities in England and Wales.

All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

The obligations of a competent authority in the 2017 Regulations for the protection of species do not change. A competent authority is a public body, statutory undertaker, minister or department of

government, or anyone holding public office.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to intentionally kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to intentionally or recklessly* damage or destroy, or obstruct access to, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to intentionally or recklessly* disturb any protected species while it is occupying a structure or place which it uses for shelter or protection.

*Reckless offences were added by the Countryside and Rights of Way (CROW) Act 2000.

The reader should refer to the original legislation for the definitive interpretation.

GCN are listed as Species of Principal Importance for Nature Conservation in England which means they are a material consideration in the planning process. The list of species is derived from Section 41 list of the Natural Environment and Rural Communities (NERC) Act 2006.

10.7 Reptiles

All of the UK's native reptiles are protected by law. The two rarest species – sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca* – benefit from the greatest protection.

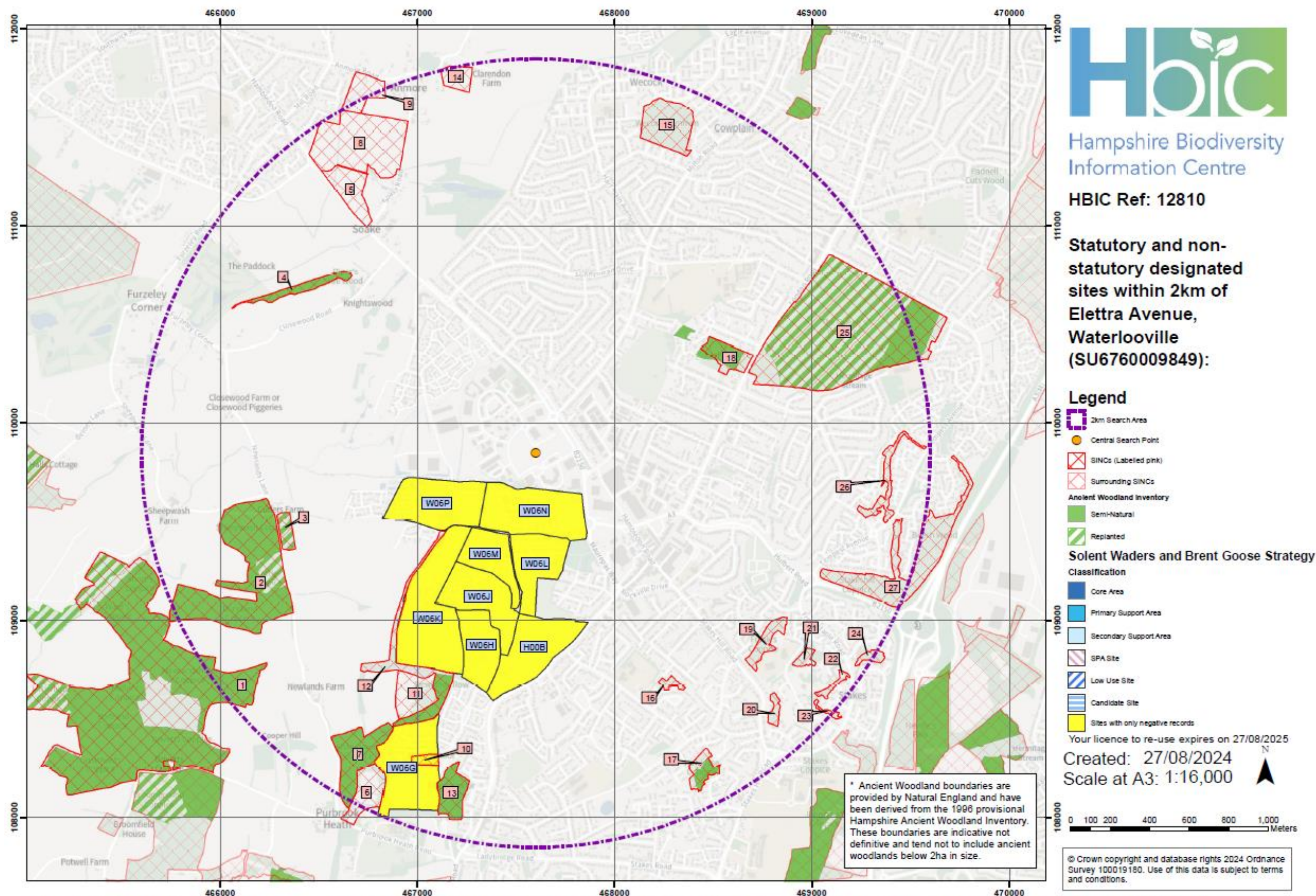
Common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, adder *Vipera berus* and grass snake *Natrix helvetica* are protected under the Wildlife and Countryside Act 1981 (as amended) from intentional killing or injuring.

Sand lizard and smooth snake are protected under the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that it is illegal to kill, injure, capture, handle or disturb these animals. Places they use for breeding, resting, shelter and protection are also protected from being damaged or destroyed. In addition, it is illegal to obstruct these animals from using such areas.

All native reptile species are listed as Species of Principal Importance for Nature Conservation in England and as such are material considerations in the planning process.

This is a simplified description of the legislation. In particular, the offences mentioned here may be absolute, intentional, deliberate or reckless. Note that where it is predictable that reptiles are likely to be killed or injured by activities such as site clearance, this could legally constitute intentional killing or injuring.

11. APPENDIX 3: Statutory and non-statutory designated sites with 2 km of site.



12. APPENDIX 4: GCN eDNA results



Folio No: E3480
Report No: 1
Order No: PE0026/ENV/HS
Client: HARRIS LAMB
Contact: Miles Haslam
Contact Details: temp@harrislamb.co.uk
Date: 02/07/2018

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS

Date sample received at Laboratory: 26/06/2018
Date Reported: 02/07/2018
Matters Affecting Results: None

RESULTS

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
3431	Waterlooville, Pond 2	SU 676 099	Pass	Pass	Pass	Negative	0
3432	Waterlooville, Pond 3	SU 676 099	Pass	Pass	Pass	Negative	0
3503	Waterlooville, Pond 6	SU 676 099	Pass	Pass	Pass	Negative	0
3504	Waterlooville, Pond 4	SU 676 099	Pass	Pass	Pass	Negative	0
3505	Waterlooville	SU 676 099	Pass	Pass	Pass	Negative	0

SUMMARY

When Great Crested Newts (GCN); *Triturus cristatus* inhabit a pond, they deposit traces of their DNA in the water as evidence of their presence. By sampling the water, we can analyse these small environmental DNA (eDNA) traces to confirm GCN habitation, or establish GCN absence.

The water samples detailed below were submitted for eDNA analysis to the protocol stated in DEFRA WC1067 (Latest Amendments). Details on the sample submission form were used as the unique sample identity.

RESULTS INTERPRETATION

Lab Sample No.- When a kit is made it is given a unique sample number. When the pond samples have been taken and the kit has been received back in to the laboratory, this sample number is tracked throughout the laboratory.

Site Name- Information on the pond.

O/S Reference - Location/co-ordinates of pond.

SIC- Sample Integrity Check. Refers to quality of packaging, absence of tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to results errors. Inspection upon receipt of sample at the laboratory. To check if the Sample is of adequate integrity when received. Pass or Fail.

DC- Degradation Check. Analysis of the spiked DNA marker to see if there has been degradation of the kit since made in the laboratory to sampling to analysis. Pass or Fail.

IC- Inhibition Check- PCR inhibitors can cause false results. Inhibitors are analysed to check the quality of the result. Every effort is made to clean the sample pre-analysis however some inhibitors cannot be extracted. An unacceptable inhibition check will cause an indeterminate sample and must be sampled again.

Result- NEGATIVE means that GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as no evidence of GCN presence. POSITIVE means that GCN eDNA was found at or above the threshold level and the presence of GCN at this location at the time of sampling or in the recent past is confirmed. Positive or Negative.

Positive Replicates- To generate the results all of the tubes from each pond are combined to produce one eDNA extract. Then twelve separate analyses are undertaken. If one or more of these analyses are positive the pond is declared positive for the presence of GCN. It may be assumed that small fractions of positive analyses suggest low level presence but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive.

METHODOLOGY

The laboratory testing adheres to strict guidelines laid down in WC1067 Analytical and Methodological Development for Improved Surveillance of The Great Crested Newt, Version 1.1

The analysis is conducted in two phases. The sample first goes through an extraction process where all six tubes are pooled together to acquire as much eDNA as possible. The pooled sample is then tested via real time PCR (also called q-PCR). This process amplifies select part of DNA allowing it to be detected and measured in 'real time' as the analytical process develops. qPCR combines PCR amplification and detection into a single step. This eliminates the need to detect products using gel electrophoresis. With qPCR, fluorescent dyes specific to the target sequence are used to label PCR products during thermal cycling. The accumulation of fluorescent signals during the exponential phase of the reaction is measured for fast and objective data analysis. The point at which amplification begins (the Ct value) is an indicator of the quality of the sample. True positive controls, negatives and blanks as well as spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared so they act as additional quality control measures.

The primers used in this process are specific to a part of mitochondrial DNA only found in GCN ensuring no DNA from other species present in the water is amplified. The unique sequence appropriate for GCN analysis is quoted in DEFRA WC 1067 and means there should be no detection of closely related species. We have tested our system exhaustively to ensure this is the case in our laboratory. We can offer eDNA analysis for most other species including other newts.

Analysis of eDNA requires scrupulous attention to detail to prevent risk of contamination. Kits are manufactured by SureScreen Scientifics to strict quality procedures in a separate building and with separate staff, adopting best practice from WC1067 and WC1067 Appendix 5. Kits contain a 'spiked' DNA marker used as a quality control tracer (SureScreen patent pending) to ensure any DNA contained in the sampled water has not deteriorated in transit. Stages of the DNA analysis are also conducted in different buildings at our premises for added

SureScreen Scientifics Ltd also participate in Natural England's proficiency testing scheme and we also carry out inter-laboratory checks on accuracy of results as part of our quality procedures.

Reported by: Sam Humphrey

Approved by: Derry Hickman

End Of Report

Folio No: E18846
Report No: 1
Purchase Order: EN757
Client: HARRIS LAMB
Contact: Josh Randhawa

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (TRITURUS CRISTATUS)

SUMMARY

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 06/07/2023
Date Reported: 19/07/2023
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
1182	Waterlooville - Pond 7	SU 67403 09687	Pass	Pass	Pass	Negative	0
3320	Waterlooville - Pond 3	SU 67600 09633	Pass	Pass	Pass	Negative	0
3321	Waterlooville - Pond 8	SU 67444 09681	Pass	Pass	Pass	Negative	0
3323	Waterlooville - Pond 4	SU 67696 09533	Pass	Pass	Pass	Negative	0
3325	Waterlooville - Pond 5	SU 67707 09472	Pass	Pass	Pass	Negative	0
3326	Waterlooville - Pond 6	SU 67727 09427	Pass	Pass	Pass	Negative	0

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com



Reported by: Chris Troth

Approved by: Jennifer Higginbottom

METHODOLOGY

The samples detailed above have been analysed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample which then undergoes DNA extraction. The extracted sample is then analysed using real time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded.

Analysis of eDNA requires scrupulous attention to detail to prevent risk of contamination. True positive controls, negative controls and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added security.

SureScreen Scientifics Ltd is ISO9001 accredited and participate in Natural England's proficiency testing scheme for GCN eDNA testing. We also carry out regular inter-laboratory checks on accuracy of results as part of our quality control procedures.

INTERPRETATION OF RESULTS

- SIC:** **Sample Integrity Check** [Pass/Fail]
When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results.
- DC:** **Degradation Check** [Pass/Fail]
Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.
- IC:** **Inhibition Check** [Pass/Fail]
The presence of inhibitors within a sample are assessed using a DNA marker. If inhibition is detected, samples are purified and re-analysed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.
- Result:** **Presence of GCN eDNA** [Positive/Negative/Inconclusive]
Positive: GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.
Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.
Negative: GCN eDNA was not detected or is below the threshold detection level and the test result



should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.

