

# Green Hill Solar Farm

## EN010170

### Environmental Statement

### Appendix 9.7: Otter and Water Vole

### Surveys

### Revision A (Tracked)

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## Schedule of Changes

<u>Revision</u>	<u>Section Reference</u>	<u>Description of Changes</u>	<u>Reason for Revision</u>
<a href="#">A</a>	<a href="#">[cover]</a>	<a href="#">Updated to Revision A</a>	<a href="#">As required for submission at Deadline 1.</a>
	<a href="#">[throughout]</a>	<a href="#">Updates to document references.</a>	<a href="#">As required for submission at Deadline 1.</a>
	<a href="#">[throughout]</a>	<a href="#">Updated to include survey results from Green Hill A.2 in Spring 2025.</a>	<a href="#">Updated survey results based on survey of Green Hill A.2.</a>



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## **1 Appendix 9.7 – Otter and Water Vole Surveys (Revision A)**

### **1.1 Introduction**

- 1.1.1 Clarkson and Woods Limited has been commissioned by Green Hill Solar Farm Limited (the Applicant) to conduct a suite of ecological surveys across Green Hill Solar Farm and Cable Route Corridor (CRC), including surveys for otters *Lutra lutra* and water voles *Arvicola amphibius*. For details about the Scheme, refer to **ES Chapter 4: Scheme Description** ~~[EN010170/APP~~[Revision A \[EX1/GH6.2.4 A\]](#).
- 1.1.2 Otter and water vole surveys completed to date have been carried out on watercourses within the Sites (Green Hill A, A.2, B, C, D, E, F, G, and BESS) identified as being suitable to support these species, between September 2023 and ~~September 2024. The results of a final survey at Green Hill A.2 from Spring 2025 will be incorporated into a revised version of this appendix during examination.~~[April 2025.](#)
- 1.1.3 Surveys followed a methodology aligned with best practice guidance, as described within the Water Vole Mitigation Handbook (Ref.1) and the Water Vole Conservation Handbook (Ref.2). Consultation with relevant stakeholders, including Natural England, has been undertaken to agree the scope of surveys.
- 1.1.4 Information on the presence of species collected during the surveys will be passed to the county biological records centre to augment their records for the area. This is in line with the Chartered Institute of Ecology and Environmental Management (CIEEM) Code of Professional Conduct (Ref.2).
- 1.1.5 The following figures have been produced to accompany this Appendix, which are included at the end of this document:
- Figure 9.7.1 Otter Survey Results (Green Hill A & A.2)
  - Figure 9.7.2 Otter Survey Results (Green Hill B)
  - Figure 9.7.3 Otter Survey Results (Green Hill C & D)
  - Figure 9.7.4 Otter Survey Results (Green Hill E)
  - Figure 9.7.5 Otter Survey Results (Green Hill BESS)
  - Figure 9.7.6 Otter Survey Results (Green Hill F)
  - Figure 9.7.7 Otter Survey Results (Green Hill G)
  - Figure 9.7.8 Water Vole Survey Results (Green Hill A & A.2)
  - Figure 9.7.9 Water Vole Survey Results (Green Hill B)
  - Figure 9.7.10 Water Vole Survey Results (Green Hill C & D)
  - Figure 9.7.11 Water Vole Survey Results (Green Hill E)
  - Figure 9.7.12 Water Vole Survey Results (Green Hill BESS)
  - Figure 9.7.13 Water Vole Survey Results (Green Hill F)



- Figure 9.7.14 Water Vole Survey Results (Green Hill G)

1.1.6 This appendix is supported by the following tables:

- Table 1: Otter and Water Vole Survey Personnel
- Table 2: Otter and Water Vole Survey Dates.
- Table 3: Watercourses Subject to Detailed Otter and Water Vole Survey
- Table 4: Habitat Suitability Assessment – Otter.
- Table 5: Summary of Otter Field Signs.
- Table 6: Habitat Suitability Assessment – Water Vole.
- Table 7: Summary of Water Vole Field Signs.

### Aims

1.1.7 Surveys for otter and water vole were undertaken to establish the presence or likely absence of these species within the Site, to ensure that the proposed works are carried out in line with relevant legislation, and to inform an appropriate approach to mitigation during the construction and operational phases of the Scheme.

1.1.8 The Survey Area encompasses all land within the Order Limits, including the Cable Route Corridor (CRC). It is noted that no field surveys of the CRC have been undertaken to date; these surveys will be completed post-consent and results summarised in a suitable addendum to this report.

1.1.9 This report details the methods and results of the surveys undertaken between September 2023 and ~~September 2024~~[April 2025](#), and an evaluation of each species is provided in relation to the Scheme.

1.1.10 This information has been used within **Chapter 9: Ecology and Biodiversity** ~~[EN010170/APP~~[Revision A \[EX1/GH6.2.9 A\]](#) of the Environmental Statement, to inform the detailed ecological evaluation of otters and water voles and the habitats used by these species, and to characterise the impacts on otters and water voles considered likely to result from the Scheme. ~~The information within this report will be updated to include any additional survey data gathered from further surveys.~~

[1.1.11 The results of additional surveys completed in Spring 2025, which have fed into this revised Appendix \(Rev A\), do not affect the conclusions drawn.](#)

### Quality Assurance

~~1.1.11~~[1.1.12](#) All ecologists employed directly by Clarkson and Woods are members or pending members of CIEEM and follow the Institute's Code of Professional Conduct when undertaking ecological work.

~~1.1.12~~[1.1.13](#) The competence of all field surveyors has been assessed by Clarkson and Woods with respect to the CIEEM Competencies for Species Survey (Ref.4).



~~1.1.13~~ 1.1.14 This report has been prepared in accordance with the relevant British Standard: *BS42020: 2013 – Biodiversity: Code of Practice for Planning and Development* (Ref.5). It has been prepared by an experienced ecologist who is a member of CIEEM. The report has also been subject to a two-stage quality assurance review by appropriately experienced ecologists who are members of CIEEM.





## 1.2 Methodology

1.2.1 The section below sets out the methodology that has been applied to inform the assessment of the Site in relation to the presence/likely absence of otters and water voles.

### Desk Study

1.2.2 A comprehensive desk study and data search has been undertaken for the Scheme. The specific elements of the desk study of relevance to otters and water voles are as follows:

- Information pertaining to existing records of otters and water voles within 2km of the Scheme Boundary and within the Cable Route Search Corridor (CRSC) was obtained from the following Local Environmental Records Centres (LERCs): Northamptonshire Biodiversity Records Centre (NBRC), Bedfordshire and Luton Biodiversity Recording and Monitoring Centre, and Buckinghamshire and Milton Keynes Environmental Records Centre; and
- The MAGIC website was consulted for records of European Protected Species (EPS) licences issued for mitigation projects concerning otter within 2km of the Scheme Boundary (Ref.6).

1.2.3 The distances used in the search radii outlined above are considered proportionate to the scale of protection and likely sensitivity of the features listed, as well as typical dispersal distance of otters and water voles supported by them.

### Survey Methods

1.2.4 The survey methodology below has been discussed and agreed with Natural England following consultation on the Scheme and has been designed based on best practice guidance and Clarkson and Woods' previous experience undertaking otter and water surveys of a similar scale on solar NSIP schemes, both now consented. The methodology was also presented within the relevant chapter of the Environmental Impact Assessment (EIA) Scoping report for the Scheme, and no concerns were raised in responses to the scoping documents received from statutory consultees.

1.2.5 Prior to the surveys commencing, ditches and watercourses within the Sites were characterised according to the following categories:

1. Rivers/streams included on DEFRA open-source watercourse layers, or features such as ditches, which have been confirmed as wet/seasonally wet features during the UK Habitat (UKHab) walkover surveys. These features were considered most likely to be suitable for otters/water voles prior to the specific otter/water vole surveys owing to the fact that they were likely to hold water for at least some of the year.
2. Watercourses identified on DEFRA's open-source datasets, but noted to be dry during the UKHab walkover surveys.



3. Ditches connecting to Category 1 or 2 watercourses, but which were not present themselves on DEFRA's open-source datasets, and which were noted to be dry during the UKHab walkover surveys.

- 1.2.6 All watercourse features falling under Categories 1 and 2 were surveyed for otter and water vole. Where the Category 1 or 2 feature was assessed as being suitable to support otters or water voles, then all adjoining Category 3 features were also subject to survey. However, where a Category 1 or 2 feature was identified as having no suitability for otters or water voles, connecting (dry) ditches falling within Category 3 were scoped out of further survey, as it was assumed that these features would also be unsuitable.
- 1.2.7 Assessment of the suitability of features for otters and water voles was made based on respective habitat requirements for each species.
- 1.2.8 Otters require consistently wet channels, generally faster flowing, to sustain suitable prey, such as fish and aquatic invertebrates. Otters also require riparian connectivity within the landscape for commuting between holt sites; aquatic channels are preferred, although this species is less reliant on water for dispersal and is able to utilise dry channels and terrestrial habitats.
- 1.2.9 Water voles typically require water year-round within watercourse channels in order to evade predators and sustain wetland plants crucial for foraging. In order to sustain healthy and stable populations, water voles also require connectivity between populations to allow dispersal of individuals and expansion of colony ranges.
- 1.2.10 Dry ditches are unlikely to support water voles, particularly in areas with limited connectivity to permanently wet watercourses and are also unlikely to form key habitat for otters (i.e. for foraging or close to holt sites).

### **Field Surveys**

- 1.2.11 Further surveys of the features within the Sites which were determined to be suitable for otters and water voles (following the methodology outlined above) were undertaken. These further surveys comprised a detailed assessment of habitat suitability, as well as detailed 'spot checks' for field signs of the presence of otters and water voles within the channels.
- 1.2.12 The total watercourse length determined as suitable for further survey comprised approximately 39km of ditches and streams throughout the Site. Considering the practicalities of surveying this extent of the watercourse network, it was decided that, in order to ensure a reasonable effort of survey across the Site, surveyors would complete spot checks at intervals of between 50-100m along the watercourse length to search for otter and water vole field signs. These spot checks involved entering the watercourse to carry out an intensive search of bankside and water-edge habitat for field signs over approximately a 10m length of watercourse. Spot-checks consisted of surveyors walking the banks and entering the watercourse (where safe to do so) every 50m to conduct a more detailed search for field signs. During each spot-check, at least a 10m stretch of the banks and channel was intensively searched for evidence of otter and water voles. In addition, particular locations containing features seen to be of potential





value to otters for holt-creation or sprainting were searched, such as at the bases of mature trees, at bridges, or at exposed bankside features.

- 1.2.13 Field signs were recorded, where present, via digital survey forms, with the locations of all evidence logged. Photographs of each watercourse and any field signs were also captured.
- 1.2.14 Field signs indicating the presence of otters which were searched for include:
- Spraints (droppings left as territory markers, typically on prominent features);
  - Prints;
  - Feeding remains (e.g. partially eaten fish and scales);
  - Slides (smooth furrows formed by otters sliding down steep banks on their stomachs);
  - Couches (bankside rest sites which take the form of a variety of features, including depressions in grassed areas, stands of dense vegetation, and overhanging tree roots);
  - Holts (underground cavities and structures used by females for giving birth and rearing otter pups); and
  - Runs through vegetation.
- 1.2.15 Field signs indicating the presence of water voles which were searched for, extending to at least 1m from the water's edge, include:
- Burrows;
  - Above-ground nests;
  - Latrines (collections of droppings);
  - Feeding remains;
  - Prints; and
  - Runs through vegetation.
- 1.2.16 It should be noted that surveys of suitable terrestrial habitat were not exhaustive and the possibility for the presence of holts or further rest sites within the Scheme cannot be ruled out. The extensive network of watercourses within the Sites is also likely to comprise valuable dispersal corridors for individuals moving transiently through the landscape.
- 1.2.17 Surveys were aligned with good practice guidelines contained within Natural England Guidance (Ref.7) (in the case of otters), and in line with best practice guidance, as described in the Water Vole Mitigation Handbook, Water Vole Conservation Handbook, and Water Vole Field Signs and Habitat Assessment guidance (Ref.8) (in the case of water voles).
- 1.2.18 As detailed within the Water Vole Mitigation handbook, *“the presence of water vole droppings is the only field sign that can be used reliably on its own.*



*Experience is required to distinguish between feeding remains, burrows and footprints of water voles and other species. However, a combination of these other signs in close proximity to each other is highly suggestive of water vole presence.”*

- 1.2.19 Two survey visits were carried out of each feature: one in spring/summer (mid-April - June) and one in late summer/autumn (July - mid-September), in accordance with Mammal Society guidance. These survey windows encapsulate the main water vole activity periods. Otter surveys are less seasonally constrained and survey for this species was combined with the water vole survey for efficiency.
- 1.2.20 The survey visits were undertaken during suitable weather conditions, avoiding periods of heavy rain, where possible, which could lead to field signs being washed away. Periods of drought were also avoided, as such extreme weather may result in an undervaluing of watercourses for both species. Where this was not possible, the limitations have been addressed in the relevant section below.
- 1.2.21 Surveyors worked in pairs for health and safety reasons due to working near water, and were equipped with waders, buoyancy aids, ranging poles and throw lines. All lead surveyors working within a pair were assessed under Clarkson and Woods QA processes as competent to complete the survey.
- 1.2.22 Waders and other survey equipment was disinfected with Virkon between sites to minimise the risk of transference of pathogens between watercourses.

#### Visit 1

- 1.2.23 During the initial visit for a particular Site, all watercourses falling under Categories 1 and 2 (as detailed above) were surveyed.
- 1.2.24 The suitability of each watercourse to support both otters and water voles was assessed (independently for each species). The assessment was completed using digital survey forms, with each habitat suitability assessment considering the following factors:
- Water quality
  - Water-level regime
  - Channel dimensions
  - Bank profile and substrate
  - Vegetation for cover and food sources (water voles)
  - Shading and presence of trees/scrub
  - Predation (water voles) and competition
  - Habitat management
- 1.2.25 Qualitative assessments of the watercourses considering the above criteria were made using the surveyors' professional judgement, and the suitability of watercourses was classified separately for water voles and otters as follows:



- **Optimal** – excellent habitat with good cover, food sources and other elements that would allow a typical water vole population to thrive throughout the year, or form part of an otter core home range/territory;
- **Good** – habitat with all the essential elements necessary for sustaining a water vole or otter population;
- **Suitable but poor** - Habitat with most of the essential features but with some factors likely to prevent suitability throughout the year;
- **Negligible** – habitat lacking one or more crucial elements for use by water voles or otters. This category does not necessarily preclude the habitat being used for dispersal or occasional occupation/forging, especially where connected to other suitable habitat, but habitat highly unlikely to sustain a residual population of this species.

#### Visit 2

1.2.26 During Visit 2, all stretches of watercourses/ditches previously surveyed for otter and/or water vole during Visit 1 were surveyed using the spot-sampling method a second time, with the exception of watercourses which were deemed 'Negligible' for both species during Visit 1. Each watercourse was entered every 50m to conduct an intensive spot-check for field signs of otter or water voles. Each 10m section was selected based on a combination of factors, such as the suitability of a particular stretch of watercourse, as well as its accessibility, and was not necessarily consistent with the stretches of watercourse that were spot-checked during the initial survey visit.

1.2.27 Any significant changes in habitat suitability were also recorded during Visit 2.

#### Cable Route Corridor

1.2.28 No field surveys have been undertaken for otter and water vole within the Cable Route Corridor (CRC). Further details of survey requirements and proposed mitigation and enhancement measures for these species relevant to the CRC are provided in the **ES Chapter 9 Ecology and Biodiversity** ~~[EN010170/APP~~[Revision A \[EX1/GH6.2.9 A\]](#).

#### Survey Personnel

1.2.29 **Table 1** presents the surveyor details for the individuals involved in undertaking otter and water vole surveys completed between September 2023 and September 2024, with survey dates presented in **Table 2**.



**Table 1: Otter and Water Vole Survey Personnel**

Surveyor Name and Relevant Qualifications	Surveyor Details and Experience
Bryan Tan MBiolSci	1 years' survey experience
Holly Chapman-White BSc Msc	Less than 1 years' survey experience
James Gilbert	MCIEEM, CEnv, 20 years' survey experience
James Latham BSc (Hons)	MCIEEM, 22 years' survey experience
Mark Jermy	14 years' survey experience
Mike Hockey BSc (Hons)	MCIEEM, 10 years' survey experience
Miranda Jones BSc	Qualifying CIEEM, 2 years' survey experience
Sarah Richards BSc MSc	Qualifying CIEEM, 3 years' survey experience

**Table 2: Otter and Water Vole Survey Dates**

Survey Visit	Survey Date
<b>Green Hill A, B, C, D, E &amp; BESS</b>	
Visit 1 (Autumn)	25/09/2023 – 28/09/2023
Visit 2 (Spring)	15/04/2024 – 24/04/2024
<b>Green Hill F</b>	
Visit 1 (Spring)	16/04/2024 – 17/04/2024
Visit 2 (Autumn)	30/09/2024 – 01/10/2025
<b>Green Hill G</b>	
Visit 1 (Spring)	22/04/2024 – 23/04/2024
Visit 2 (Autumn)	01/10/2024
<b>Green Hill A.2</b>	
Visit 1 (Autumn)	24/09/2024 and 30/09/2024 <del>– 01/10/2024</del>
Visit 2 (Spring)	14/04/2025



### Evaluation of Importance

- 1.2.30 The importance of the Sites for otters and water voles was evaluated using the standard approach applied in the UK to Ecological Impact Assessment, developed by CIEEM in 2018 and revised in 2019 (Ref.9). This guidance recommends that valuation of site importance is made with reference to a geographical framework, e.g. a site is of Local, District, County, Regional, National or International value. Additional categories of 'Site' or 'Negligible' importance are also applied, where relevant.
- 1.2.31 A detailed methodology for the evaluation of baseline biodiversity importance is provided in the **ES Chapter 9: Ecology and Biodiversity** ~~[EN010170/APP~~[Revision A \[EX1/GH6.2.9 A\]](#).
- 1.2.32 To inform the evaluation in this report, the fields signs recorded indicating presence of otters and water voles (between September 2023 and ~~October 2024~~[April 2025](#)) were considered in the context of the quality of habitat present, as well as the distribution and abundance of the species within the local area and the UK.

## **1.3 Limitations**

### Desk Study

- 1.3.1 The data search for the Sites and for the CRSC was completed in June 2024, and does not include records made subsequently. The datasets only provide records where information exists and should not be relied upon as a complete listing of all otters and water voles which may occur within the search areas.

### Field Surveys

- 1.3.2 The bankside vegetation along certain sections of the surveyed watercourses was so dense and impenetrable that it prevented detailed inspection of these areas. Spot checks were made successfully further up/down stream, but any field signs present within the inaccessible areas were therefore not observed.
- 1.3.3 Otters have no defined breeding season, and the breeding holt is kept deliberately obscure by the female. Locating holts can therefore be challenging, especially when vegetation is particularly dense.
- 1.3.4 Where water voles live at low densities or a Site is at the edge of their range, field signs can be sparse and difficult to locate.
- 1.3.5 The surveys conducted offer only brief 'snapshots' of the Site and take no account of differences over time, or of any species which might choose to take up residence on Site subsequently. Similarly, a lack of signs of any particular species does not confirm its absence, merely that there was no indication of its presence during the survey.
- 1.3.6 During the habitat suitability surveys undertaken on 24<sup>th</sup> September 2024, it was noted by the surveyor that water levels within the watercourses were elevated following recent, prolonged heavy rain. Given that elevated water levels may



obscure burrows or may have washed away other field signs, it was decided that spot checks would be postponed until water levels had suitably subsided. Spot checks at Sites Green Hill A.2, F, and G were undertaken the following week on 31<sup>st</sup> September and 1<sup>st</sup> October 2024. Although water levels had notably subsided and no significant rainfall had been recorded in the days immediately prior to the surveys, the possibility that field signs may have been under-recorded during this visit should be considered.

1.3.7 It should be noted that surveys of suitable terrestrial habitat were not exhaustive and the possibility for the presence of holts or further rest sites within the Scheme cannot be ruled out. The extensive network of watercourses within the Sites is also likely to comprise valuable dispersal corridors for individuals moving transiently through the landscape.

1.3.8 Habitat suitability assessments have been based on professional judgement only. The overall assessment given to any individual site only provides an indication of likely occupation based on known habitat requirements.

~~1.3.9 Given the later addition of Green Hill A.2 into the Scheme, otter and water vole surveys have only recently been completed at this Site, in April 2025. Following the submission of the DCO application, an updated version of this appendix will be prepared incorporating the data from this April 2025 survey.~~

~~1.3.10~~ [1.3.9](#) No surveys have been undertaken to date of watercourses within the CRC. Completion of habitat suitability assessments and further surveys have been deferred to post-consent, if granted, and will be undertaken prior to the commencement of works on the CRC. Results of these surveys will be used to inform micro-siting of the cable within the CRC, construction methodologies, and mitigation licence applications (if required).





## 1.4 Results

### Desk Study

- 1.4.1 A summary of desk study results relating to otters and water voles is provided below. Refer to **Appendix 9.3: Desk Study** [~~EN010170/APP/GH6.3.9.3-086~~] for full data search results and associated figures.

### Protected Species Records

#### Otter

- 1.4.2 A total of nine records of otter were returned during the desk study within the Study Area. This included two records within 2km of Green Hill B, two records within 2km of Green Hill C, three records within 2km of Green Hill D, four records within 2km of Green Hill E, one record within Green Hill G, and two records within 2km of Green Hill BESS.

#### Water Vole

- 1.4.3 A total of 11 records of water vole were returned during the desk study within the Study Area. This included two records within 2km of Green Hill C, two records within 2km of Green Hill D, and 11 records within 2km of Green Hill E.
- 1.4.4 No records of American mink *Neovison vison* (an invasive predator of water voles) were returned during the desk study.

### Field Surveys

#### Watercourses Surveyed

- 1.4.5 Following the methodology set out in Section 1.2, features within the Site that would be subject to further survey were determined and are presented in **Table 3** below and in the Figures accompanying this Appendix.

**Table 3: Watercourses Subject to Detailed Otter and Water Vole Survey**

Watercourse Type	Boundary Reference	Number of Boundaries Surveyed	Total Length
<b>Green Hill A</b>			
Stream	AW9, AW2, and AW8	3	0.926km
Ditch	AB3, AB30, AW7, AB1, AW10, AW6, AW4, AW5, AW3, AB8, AB7, AB6, AW1, AB20, AB19	15	3.687km
<b>Green Hill A.2</b>			
Ditch	A2B2, A2B3, A2B6, A2B7, A2B8, A2B9, A2B10, A2B12, and A2B13	9	3.696km
<b>Green Hill B</b>			
Ditch	BW1	1	0.638km



Watercourse Type	Boundary Reference	Number of Boundaries Surveyed	Total Length
<b>Green Hill C</b>			
Ditch	CW3, CW1, CD1, CD2, and CW2	5	1.480km
<b>Green Hill D</b>			
Stream	DW1	1	1.622km
Ditch	DB6 and DB11	2	0.896km
<b>Green Hill E</b>			
Stream	EW11, EW9, EW8, EW6, EW4, EW3, and EW5	7	2.236km
Ditch	EB24, EB38, and EB41	3	0.965km
<b>Green Hill F</b>			
Stream	FW2, FW1 FW3, FW8, FW21, FW9, FW10, FW20, FW19, FW17, FW12, FW11, FW13, FW14, and FW25	15	4.631km
Ditch	FW24, FB16, FW7, FW6, FB41, FB42, FB44, FB51, FB36, FB34, FW16, FW15, FB60, FW22, FB62, FW23, FW26, FB72, FB74, FW27, FW28, FB80, and FW29	23	7.915km
<b>Green Hill G</b>			
Ditch	GB1, GD1, GD2, GB2, GB3, GD3, GW1, GB9, GB10, GB9/GB10A, GD4, GD5, GW3, GW7, GD6, GD7, GD8, GB21, GW5, GB4, GB13, GW4, GB20, GB15, GD9, GD10, GD11, and GD12	28	8.429km
<b>Green Hill BESS</b>			
Ditch	BESSD1, BESSW2, BESSW1, BESSW6, BESSW5, BESSW4, and BESSW3	7	1.880km

## **Otter**

### **Habitat Suitability**

- 1.4.6 Watercourses throughout the Sites were assessed as being of variable suitability for otter. Generally, streams represented higher quality otter habitat, being the



only watercourses classified as optimal, although a small number of ditches at Green Hill F and BESS were also identified as being of good suitability. As well as the watercourses themselves, riparian vegetation and adjacent woodland within and immediately adjacent the Sites also provide valuable habitat for the species. Areas of dense vegetation, including woodlands, provide terrestrial connectivity between watercourses and potential locations for holt/couch site creation.

- 1.4.7 None of the surveyed watercourses were classified as being of negligible suitability for otter due to their value as commuting features; the majority of watercourses within the Sites were considered to provide suitable but poor habitat for otter. Indeed, even those watercourses not identified for further survey are likely to act as conduits for otter dispersal between watercourses within the local landscape and the River Nene Catchment.
- 1.4.8 Those watercourses identified as being of suitable but poor quality for otter, including both ditches and streams, were typically dry or held shallow, static or slowly flowing water, and were therefore unlikely to support sufficient prey to constitute key foraging habitat for the species. The majority of these watercourses comprised agricultural drainage ditches, within which water levels are likely to fluctuate throughout the year. Intermittently dry watercourses still provide commuting value for otter, as the channels provide a network of sheltered, connected dispersal pathways within the landscape allowing individuals to commute between more suitable watercourses and between holt/couch sites.
- 1.4.9 Higher quality otter habitat was noted at Sites Green Hill A, E, F and BESS.
- 1.4.10 A single stream (AB3) was considered to represent good suitability habitat at Green Hill A, with direct connectivity to the lakes at Pitsford Water Nature Reserve located approximately 1.74km south-west of the Site. Mature trees over-sailed the length of the stream, with exposed roots noted frequently within the shallow, earth banks, providing sheltering opportunities for otter. It is possible that otter may utilise the watercourse for both commuting and foraging, as the channel held approximately 30cm of slow flowing water at the time of the survey and was considered likely to support a population of small fish and aquatic prey species.
- 1.4.11 At Green Hill E, a single stream (EW4), known as Swanspool Brook, was classified as being of good suitability for otter. The stream was vegetated along its length, providing connectivity to woodland blocks to the north and south, with several features suitable for otter rest sites noted, including exposed tree roots and a small footbridge. Four records of otter were returned within 2km of Green Hill E during the desk study, of which two were associated with Sywell Reservoir and Country Park located 0.40km west of the Site. Despite the presence of a minor road (Earls Barton Road) between EW4 and the reservoir, which may represent a partial barrier to otter movement, it is likely that otters utilizing the plentiful fish stocks at the reservoir for foraging are able to disperse from this waterbody via suitable terrestrial corridors and watercourses at Green Hill E.
- 1.4.12 Three sections of Grendon Brook (FB9, FB43, and FW13) represented optimum habitat for otter at Green Hill F, with a further 11 watercourses at the Site comprising good quality habitat. Watercourses at Green Hill F constitute the



greatest extent of suitable habitat for otter at a single Site (8.324km). The wooded stream corridor associated with Grendon Brook provides suitable sheltering sites for otter, and dense vegetation contributes to the commuting value of the feature by connecting the watercourse with woodland block immediately adjacent the Site. Those watercourses of good suitability at Green Hill F were typically streams with moderately flowing water and were considered likely to support prey species for otter, although two ditches (FW15 and FW23) also comprised good quality habitat. Green Hill F is notable in its suitability for the species, given the continuous extent of suitable watercourses, particularly in the northern half of the Site, and the quality of riparian habitats present.

- 1.4.13 The section of Grendon Brook that forms part of the boundary of Green Hill BESS (FB7 and FB7.A.CP) was also identified as optimum habitat for otter. Both the Grendon Brook and FB9, comprising optimum and good suitability habitat respectively, run in close proximity to the lakes and wetland habitats associated with the Upper Nene Valley Gravel Pits Special Protection Area (SPA), located 0.04km from Green Hill BESS. This area provides extensive suitable habitat for otter and, although not returned during the desk study, incidental sightings of the species have been frequently recorded within the SPA (Ref.10). Green Hill BESS is also bounded by numerous woodland blocks, which provide suitable holt/couch site creation.
- 1.4.14 In addition to the large waterbodies within the surrounding landscape, as identified above, it is likely that ponds of sufficient depth and water quality within the Sites to support populations of fish and amphibians also provide valuable foraging resources for otter.
- 1.4.15 The results of habitat suitability assessments for otter of surveyed features within the Site are summarised in **Table 4**. In total, 125 watercourses were identified of which:
- 4% of watercourses were classified as 'Optimal'.
  - 11.2% of watercourses were classified as 'Good'.
  - 84.8% of watercourses were classified as 'Suitable but Poor'.
  - No watercourses were classified as 'Negligible'.
- 1.4.16 Habitat suitability and otter field signs are shown in **Figures 9.7.1 – 9.7.7**.



**Table 4: Habitat Suitability Assessment – Otter**

Suitability for Otters	Watercourse Type	Boundary Reference	Number of Boundaries	Total Length
<b>Green Hill A</b>				
Good	Stream	AW9	1	0.626km
Suitable but Poor	Stream	AW8 and AW2	2	0.300km
	Ditch	AB3, AB30, AW7, AB1, AW10, AW6, AW4, AW5, AW3, AB8, AB7, AB6, AW1, AB20, and AB19	15	3.687km
<b>Green Hill A.2</b>				
Suitable but Poor	Ditch	A2B2, A2B3, A2B6, A2B7, A2B8, A2B9, A2B10, A2B12, and A2B13	9	3.696km
<b>Green Hill B</b>				
Suitable but Poor	Ditch	BW1	1	0.638km
<b>Green Hill C</b>				
Suitable but Poor	Ditch	CW3, CW1, CD1, CD2, and CW2	5	1.480km
<b>Green Hill D</b>				
Suitable but Poor	Stream	DW1	1	1.622km
	Ditch	DB6 and DB11	2	0.896km
<b>Green Hill E</b>				
Good	Stream	EW4	1	0.349km
Suitable but Poor	Stream	EW11, EW9, EW8, EW6, EW3, and EW5	6	1.887km
	Ditch	EW1, EW10, and EW2	3	0.965km
<b>Green Hill F</b>				
Optimal	Stream	FW2, FW12, and FW13	3	0.684km
Good	Stream	FW3, FW8, FW9, FW10, FW20, FW19, FW11, FW14, and FW25	9	3.078km



Suitability for Otters	Watercourse Type	Boundary Reference	Number of Boundaries	Total Length
	Ditch	FW15 and FW23	2	0.556km
Suitable but Poor	Stream	FW1, FW21, and FW17	3	0.870km
	Ditch	FB16, FW7, FW6, FB41, FB42, FB44, FB51, FB36, FB34, FW16, FB60, FW22, FB62, FW26, FB72, FB74, FW27, FW28, FB80, FW29, and FW24	21	7.360km
<b>Green Hill G</b>				
Suitable but Poor	Ditch	GB1, GD1, GD2, GB2, GB3, GD3, GW1, GB9, GB10, GW2, GD4, GD5, GW3, GW7, GD6, GD7, GD8, GB21, GW5, GB4, GB13, GW4, GB20, GB15, GD9, GD10, GD11, and GD12	28	8.428km
<b>Green Hill BESS</b>				
Optimal	Stream	BESSW2 and BESSW1	2	0.621km
Good	Ditch	BESSW6	1	0.264km
Suitable but Poor	Ditch	BESSD1, BESSW5, BESSW4, and BESSW3	4	0.995km

### Field Signs

- 1.4.17 Otter field signs were recorded at Sites Green Hill C, D, E, F and at Green Hill BESS.
- 1.4.18 Although good quality habitat for otter was present at Green Hill A, no evidence of the species was noted at this Site. No otter signs were recorded at Green Hill A.2, B or G either.
- 1.4.19 At Green Hill C, an otter spraint was noted within CW2 in Spring 2024, which comprised suitable but poor habitat for the species. This demonstrates the value





of even sub-optimal watercourses on Site for otters present within the surrounding landscape.

- 1.4.20 Otter field signs were also noted in watercourses considered to represent suitable but poor habitat at Green Hill D. Two otter spraints were recorded along DW1 in Spring 2024. At the site of one of the spraints, a potential couch or lying-up site was noted by the surveyor associated with the root plate of a fallen tree adjacent to the watercourse.
- 1.4.21 Otter field signs were recorded exclusively within streams (rather than ditches) at Green Hill E, including within the watercourse identified as good suitability habitat for the species (EW4). Spraints were recorded within EW4 and EW3, associated with a bridge over the stream in Autumn 2023. Otter prints were also noted within the Site, as well as potential rest sites. Cavities with potential for use by otters were recorded associated with EW11 and EW4, although no signs of use were evident.
- 1.4.22 Potential rest sites were also identified by surveyors at Green Hill F; wooded corridors and bankside vegetation alongside FB34 and FW13 provided shelter and cover, with cavities noted associated with exposed tree roots. Otter spraint was recorded along FW2, which was considered to provide optimal habitat for the species, alongside FW13.
- 1.4.23 At Green Hill BESS, otter field signs comprising a print and spraint were recorded in Autumn 2023 and Spring 2024, respectively, along the same watercourse, BESSW6.
- 1.4.24 Numerous field signs recorded during the surveys completed to date confirm the presence of otter within the Sites. Whilst otter territories can be wide ranging (up to 35km for males (Ref.11)), given the scale of the Scheme and distance between Sites, it is possible that the Sites may form part of multiple territories. Although no holt sites were found by surveyors, it is likely that holt sites exist in proximity to the Sites, within the numerous woodland blocks and areas of dense vegetation present within the surrounding area.

**Table 5: Summary of Otter Field Signs**

Field Sign	Boundary Reference	Watercourse Type	Habitat Suitability
<b>Green Hill C</b>			
Otter spraint	CW2	Ditch	Suitable but Poor
<b>Green Hill D</b>			
Otter spraint	DW1	Stream	Suitable but Poor
Otter spraint			



Field Sign	Boundary Reference	Watercourse Type	Habitat Suitability
Potential rest site			
<b>Green Hill E</b>			
Potential rest site	EW11	Stream	Suitable but Poor
Otter print	EW8	Stream	Suitable but Poor
Otter spraint	EW4	Stream	Good
Potential rest site			
Otter spraint	EW3	Stream	Suitable but Poor
<b>Green Hill F</b>			
Otter spraint	FW2	Stream	Optimal
Potential rest site	FB34	Ditch	Suitable but Poor
Potential rest site	FW13	Stream	Optimal
<b>Green Hill BESS</b>			
Otter print	BESSW6	Ditch	Good
Otter spraint			

## **Water Vole**

### **Habitat Suitability**

- 1.4.25 Watercourses throughout the Sites also varied in their suitability for water vole. The majority of watercourses comprised sub-optimal habitat, classified as being either suitable but poor or of negligible value for the species, with only c.7% of watercourses (2.38km in total) identified as providing good or optimal habitat.
- 1.4.26 Dry watercourses comprised the majority of features considered to provide negligible suitable habitat for water vole, particularly where these watercourses were heavily shaded along their length. Water voles rely on sufficient year-round water levels to provide shelter from predators and facilitate commuting within



channels, and so those watercourses that are considered likely to be dry for much of the year are generally unsuitable for the species. Similarly, heavy shading by dense overhanging trees and overgrown, scrubby bankside vegetation, including hedgerows, limits the suitability of watercourses for water vole; where shading prevents sunlight from reaching the banks, suitable forage and bankside shelter for water vole, such as grasses and reeds, are unable to grow.

- 1.4.27 Watercourses classified as providing suitable but poor habitat for water vole were often noted as being intermittently dry or shaded by vegetation on at least one bank – this was often the case where watercourses existed alongside boundary hedgerows. Where wooded riparian corridors were noted as beneficial features of streams in relation to otters, these watercourses were generally considered to represent sub-optimal habitat for water vole. Bank profile was also considered to be a limiting factor for watercourses classified as suitable but poor, with shallow banks providing limited opportunities for burrow creation.
- 1.4.28 Higher quality water vole habitat (i.e. of optimal or good suitability) was recorded at only three of the nine Sites; Green Hill A, F and BESS. These watercourses were almost exclusively ditches, with the exception of Grendon Brook (streams at BESSW2 and BESSW1) at Green Hill BESS, which comprised optimal habitat for water vole, alongside BESSW6 (ditch) at the same Site. Optimal watercourses held at least 0.5m of slow to moderately flowing water at the time of the surveys and were considered likely to hold water year-round. These channels were deep, up to 6m, with banks vegetated by reeds and grasses providing abundant forage and cover for water voles. Watercourses at Green Hill BESS were also well-connected to streams and drainage ditches immediately surrounding the Site, including the nearby Upper Nene Valley Gravel Pits SPA within which water vole have been reported (Ref.12).
- 1.4.29 Further good suitability ditches were generally well-vegetated with plant foods with minimal shading from overhanging branches. The likelihood of fluctuations in water levels in these watercourses was generally the limiting factor preventing these watercourses being considered optimal habitat for water vole. Several good suitability ditches were isolated, with limited connectivity to surrounding watercourses, specifically further good quality for the species that may allow dispersal of water vole to/from individual suitable watercourses.
- 1.4.30 It is worth noting that no watercourses at those Sites for which records of water vole within 2km were identified during the desk study (Green Hill C, D, and E) were considered to represent good or optimal habitat for the species. It's possible that the absence of good quality habitat and the fragmented nature of watercourses subject to further survey within these Sites may be limiting the dispersal of water voles present in the surrounding landscape.
- 1.4.31 Ponds within the Sites may provide limited further suitable habitat for water vole for all or parts of the year, where the banks are free of damaging activities, such as poaching by grazing livestock, and sufficient water levels are maintained.
- 1.4.32 The results of habitat suitability assessments for water vole of surveyed features within the Site are summarised in **Table 6** below. In summary, 125 watercourses were identified of which;



- 2.4% of watercourses were classified as ‘Optimal’
- 4.8% of watercourses were classified as ‘Good’
- 57.6% of watercourses were classified as ‘Suitable but Poor’
- 35.2% of watercourses were classified as ‘Negligible’

1.4.33 Habitat suitability and water vole field signs are shown in **Figures 9.7.8-9.7.14**.

**Table 6: Habitat Suitability Assessment – Water Vole**

Suitability for Water Vole	Watercourse Type	Boundary Reference	Number of Boundaries	Total Length
<b>Green Hill A</b>				
Good	Ditch	AW7	1	0.146km
Suitable but Poor	Stream	AW9 and AW8	2	0.730km
	Ditch	AB3, AW3 and AB30	2	0.545km
Negligible	Stream	AW2	1	0.196km
	Ditch	AW10, AB8, AB6, AB7, AB1, AW1, AW5, AW4, AW6, AB20, and AB19.	11	2.842km
<b>Green Hill A.2</b>				
Suitable but Poor	Ditch	A2B7, A2B8, A2B9, A2B10, and A2B13	5	2.260km
Negligible	Ditch	A2B2, A2B3, A2B6, and A2B12	4	1.435km
<b>Green Hill B</b>				
Negligible	Ditch	BW1	1	0.638km
<b>Green Hill C</b>				
Suitable but Poor	Ditch	CW2	1	0.613km
Negligible	Ditch	CW3, CW1, CD1, and CD2	4	0.867km
<b>Green Hill D</b>				
Suitable but Poor	Stream	DW1	1	1.622km
Negligible	Ditch	DB6 and DB11	2	0.896km
<b>Green Hill E</b>				



Suitability for Water Vole	Watercourse Type	Boundary Reference	Number of Boundaries	Total Length
Suitable but Poor	Stream	EW11, EW9, EW8, EW6, EW4, EW3, and EW5	7	2.236km
	Ditch	EW1, EW10, and EW2	3	0.965km
<b>Green Hill F</b>				
Good	Ditch	FW15, FW23, FW26, and FW29	4	1.084km
Suitable but Poor	Stream	FW9, FW1, FW3, FW8, FW21, FW9, FW10, FW20, FW19, FW17, FW12, FFW11, FW13, and FW14	14	4.231km
	Ditch	FB16, FW7, FW6, FB41, FW16, FW22, FW27, and FB80	8	2.901km
Negligible	Stream	FW25	1	0.401km
	Ditch	FB42, FB36, FB51, FB36, FB34, FB60, FB62, FB72, FB74, FW28, FW29, FW29, and FW24	13	3.930km
<b>Green Hill G</b>				
Suitable but Poor	Ditch	GB1, GD1, GD2, GB2, GD3, GW1, GB9, GB10, GD4, GD5, GW3, GW7, GD6, GD7, GD8, GW5, GW4, GB15, GD9, GD10, GD11, and GD12	23	6.836km
Negligible	Ditch	GB3, GB21, GB4, GB13, and GB20	5	1.592km
<b>Green Hill BESS</b>				
Optimal	Stream	BESSW2 and BESSW1	2	0.621km
	Ditch	BESSW6	1	0.264km
Good	Ditch	BESSW3	1	0.265km



Suitability for Water Vole	Watercourse Type	Boundary Reference	Number of Boundaries	Total Length
Suitable but Poor	Ditch	BESSW5 and BESSW4	2	0.554km
Negligible	Ditch	BESSD1	1	0.176km

### Field Signs

- 1.4.34 No conclusive evidence of water vole presence within the Sites was noted during the surveys. However, several possible signs of water vole activity were recorded at Sites Green Hill C, D, and BESS, and the presence of this species within the Sites cannot be ruled out. Where field signs were equivocal, water vole presence has been assumed on a precautionary basis in line with good practice guidance.
- 1.4.35 As noted above, Sites Green Hill C and D are located in proximity to desk study records of water vole presence, and the expansion or dispersal of these populations into the Sites is a possibility, despite the limited connectivity and availability of good quality habitat.
- 1.4.36 A single dead water vole was recorded outside of the Site Boundary at Green Hill E, associated with an off-site pond within a woodland belt at the south-western boundary. The pond is located less than 20m from an off-site section of Swanspool Brook, which continues into the Site approximately 300m to the north (EW4) and south (EW5). No water vole field signs were recorded associated with watercourses within Green Hill E, although potential evidence of the species was noted within Swanspool Brook at Green Hill D. Water voles may traverse terrestrial habitats over short distances in search of forage, mates or territories and so the expansion of the population within the pond and within Swanspool Brook into watercourses at Green Hill E is possible.
- 1.4.37 Five potential water vole burrows were observed at Green Hill C in Spring 2024 within CW2, (considered to be suitable but poor habitat for the species). Given that rat *Rattus norvegicus* droppings were also present within the same watercourse, it is possible that these burrows are attributable to rat.
- 1.4.38 Numerous potential water vole burrows were present along Swanspool Brook (DW1) at Green Hill D forming a network along the watercourse. Possible feeding remains and water vole droppings were also noted within Swanspool Brook, although these signs were found alongside evidence of smaller vole activity and could not be unequivocally attributed to water vole. It was also noted by surveyors that larger droppings among the latrines may have become swollen owing to water absorption over time.
- 1.4.39 Possible water vole feeding remains were recorded at Green Hill BESS during surveys in Autumn 2023 and Spring 2024 in watercourses BESSW2 and BESSW3, respectively. These watercourses represent some of the most suitable water vole habitat within the Sites. Whilst no other signs of recent water vole activity were observed, feeding remains comprised rushes *Juncus sp.* which are





a key foraging resource for the species. Green Hill BESS is considered to be particularly valuable for water vole, if present, across the Sites. It is noted that feeding remains in isolation should not be used as definitive presence; however, for the purpose of this assessment presence has been assumed.

- 1.4.40 No water vole signs were recorded along watercourses surveyed at Sites A, [A.2](#), B, F and G.

**Table 7: Summary of Water Vole Field Signs**

Field Sign	Boundary Reference	Watercourse Type	Habitat Suitability
Green Hill C			
Potential water vole burrows	CW2	Ditch	Suitable but Poor
Green Hill D			
Potential water vole burrows	DW1	Stream	Suitable but Poor
Potential water vole droppings			
Potential water vole feeding remains			
Green Hill E			
Dead water vole	Off-Site	Pond	N/A
Green Hill BESS			
Potential water vole feeding remains	BESSW2	Stream	Optimal
Potential water vole feeding remains	BESSW3	Ditch	Good

### **Additional Species**

- 1.4.41 During the surveys, field signs of several additional species were noted within the Sites. Numerous signs of rat activity were recorded, particularly at Green Hill E, including droppings, burrows and prints. Evidence of smaller vole species, such as field vole *Microtus agrestis* and bank vole *Myodes glareolus*, were also frequently noted, with field signs concentrated at Sites Green Hill F and G.
- 1.4.42 Notably, possible mink prints were observed at Green Hill E (EW11) and Green Hill F (FW1) in Spring and Autumn 2024, respectively. Mink [are](#) a voracious predator of water voles; it is unlikely therefore that water vole populations would persist within these Sites if mink are present.



## 1.5 Evaluation and Conclusion

- 1.5.1 This section sets out a summary of survey results between September 2023 and ~~October 2024~~[April 2025](#), and an evaluation of the populations of otter and water vole within the Scheme Boundary with the potential to be impacted by the Scheme.

### Evaluation

#### Otter

- 1.5.2 Overall, habitats within the Sites represent a relatively well-connected network for otters, which were confirmed to be present at Sites Green Hill C, D, E, F, and at Green Hill BESS. Otter is a wide-ranging species, and so their presence or future presence within further Sites cannot be ruled out where evidence has not yet been recorded.
- 1.5.3 Several streams within the Sites, including Grendon Brook and Swanspool Brook, provide optimal and good quality habitat for this species and are able to support foraging. The network of agricultural drainage ditches within the Sites are of reduced value and are likely to support commuting individuals only.
- 1.5.4 Limited terrestrial habitats within the Sites were considered suitable for holt and couch creation, although wooded riparian corridors and numerous off-site woodland blocks provide opportunities for the creation of rest sites. No such sites were confirmed during the surveys as off-site habitats were not searched for evidence of otter activity and extensive terrestrial surveys were not carried out.
- 1.5.5 Otter at Sites Green Hill A – G and BESS were considered to be ‘**Local**’ importance.

#### Water Vole

- 1.5.6 Presence of water vole within the Sites was not confirmed during the surveys, although several potential field signs were noted, including burrows, feeding remains, and latrines, at Sites Green Hill C, D and BESS. A dead water vole was noted associated with a pond outside of the Site Boundary at Green Hill E, with connectivity to on-site watercourses via Swanspool Brook. For the purposes of this assessment and in line with the precautionary principle, water vole presence has been assumed at those Sites where potential field signs were recorded during the surveys (Green Hill C, D, and BESS), or where water vole presence was confirmed in close proximity to the Sites (in the case of Green Hill E).
- 1.5.7 The majority of surveyed watercourses across the Sites represented low quality habitat for water voles (either negligible or suitable but poor), with variable water levels, heavy shading and many dry ditches limiting connectivity for this species. More suitable watercourses were generally those that held water year-round with abundant bankside and emergent vegetation suitable for foraging and providing shelter for burrow creation.
- 1.5.8 Water vole, if present, at Sites Green Hill A – G and BESS were considered to be of ‘**District**’ importance.



### Conclusion

- 1.5.9 The presence of otters has been confirmed at Sites Green Hill C, D, E, F and BESS, with streams generally constituting the most suitable habitat for the species, and the network of ditches (including dry ditches) provide conduits for otter dispersal within the Sites and surrounding area. Given the mobile nature of the species and presence of suitable watercourses at all Sites, otters are not considered likely to be absent from any Sites.
- 1.5.10 Water vole presence was not confirmed within the Sites during the surveys, although a dead individual was noted just off-site at Green Hill E, and several potential signs of water vole activity were noted at Sites C, D, and BESS. Water vole presence at these four Sites has been assumed on a precautionary basis. The species was considered likely to be absent from Sites Green Hill A, A.2 ~~(pending results of final survey)~~, B, F, and G, with the extent of good/optimal quality habitat limited within these areas and absence of field signs, although their presence cannot be completely ruled out.
- 1.5.11 Further information pertaining to the CRC, and appropriate avoidance, mitigation, compensation and enhancement measures within the Scheme relating to otter and water vole are detailed within the **ES Chapter 9 Ecology and Biodiversity [EN010170/APP/GH6.2.9]**. ~~Results of surveys at Green Hill A.2 scheduled for Spring 2025 will also be provided in an updated version of this report.~~ [Revision A \[EX1/GH6.2.9 A\]](#).



## 1.6 References

- Ref.1 Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016) The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds. Fiona Mathews and Paul Chanin. The Mammal Society, London
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- Ref.3 CIEEM (February 2022) Code of Professional Conduct. Available at: <https://cieem.net/resource/code-of-professional-conduct/>
- Ref.4 CIEEM (2013) Competencies for Species Survey (CSS). Available at: [www.cieem.net/competencies-for-species-survey-css-](http://www.cieem.net/competencies-for-species-survey-css-)
- Ref.5 The British Standards Institution (2013) BS42020: 2013 – Biodiversity: Code of Practice for Planning and Development. BSI Standards Ltd.
- Ref.6 Available at: <https://magic.defra.gov.uk/magicmap.aspx>
- Ref.7 Natural England (2014). Otters: surveys and mitigation for development projects.
- Ref.8 Dean, M. (2021) Water Vole Field Signs and Habitat Assessment: A Practical Guide to Water Vole Surveys. Pelagic Publishing, Exeter, UK
- Ref.9 CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management. Available at: <https://cieem.net/>
- Ref.10 Available at: <https://nenevalley.net/spa>
- Ref.11 Available at: <https://cieem.net/wp-content/uploads/2019/07/natural-information-otters-and-development-2011.pdf>
- Ref.12 Available at: <https://westnorthants.moderngov.co.uk/documents/s3051/Upper%20Nene%20Valley%20Gravel%20Pits%20Special%20Protection%20Area%20-%20Appendix%20B.pdf>



479250

480000

480750

481500

482250



Title: 9.7.1 Otter Survey Results (Green Hill A & A.2)

Document: Volume 2  
Appendix 9.7 - Otter and Water Vole Surveys  
Environmental Statement (ES)

Legend:

Order Limits

**Otter Evidence**

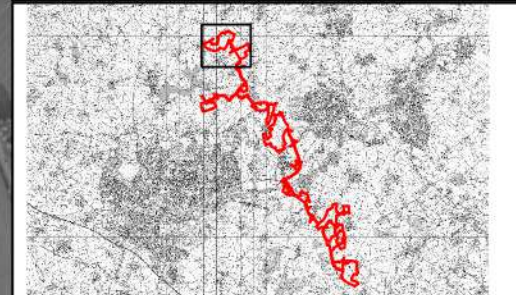
Potentially suitable day-time lying up site

**Otter Suitability**

Good

Suitable but poor

Data: IGP, 2025,  
Base Maps: © Crown copyright and database rights 2024 Ordnance Survey  
0100031673  
Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024



APFP Regulation: 5(2)(a)

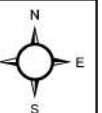
Application Doc no.: EN010170/APP/GH6.3.9.7

Drawing no.: CW.ES.OV.1

Co-ordinate system: OSGB36 / British National Grid

Scale: 1:12000 @ A3

0 0.1 0.2 0.3 0.4 0.5 km





478800

479100

479400

479700

480000

269100

268800

268500

268200



Title: 9.7.2 Otter Survey Results (Green Hill B)

Document: Volume 2  
Appendix 9.7 - Otter and Water Vole Surveys  
Environmental Statement (ES)

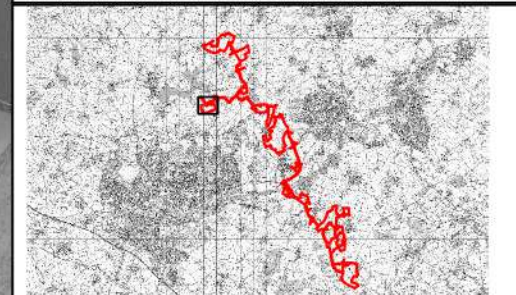
Legend:

Order Limits

**Otter Suitability**

Suitable but poor

Data: IGP, 2025,  
Base Maps: © Crown copyright and database rights 2024 Ordnance Survey  
0100031673  
Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024



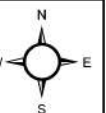
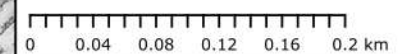
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Application Doc no.: EN010170/APP/GH6.3.9.7

Drawing no.: CW.ES.OVW.2

Co-ordinate system: OSGB36 / British National Grid

Scale: 1:4800 @ A3







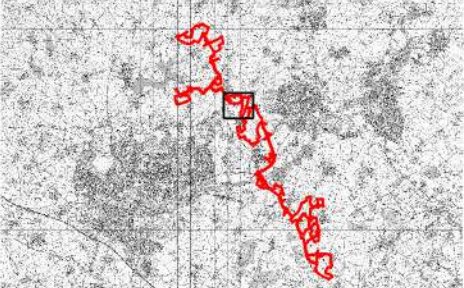
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Document: Volume 2  
Appendix 9.7 - Otter and Water Vole Surveys  
Environmental Statement (ES)

Legend:

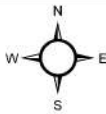
- Order Limits
- Otter Suitability**
  - Suitable but poor
- Otter Evidence**
  - Spraint

Data: IGP, 2025,  
Base Maps: © Crown copyright and database rights 2024 Ordnance Survey  
0100031673'  
Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024



APFP Regulation: 5(2)(a)  
Application Doc no.: EN010170/APP/GH6.3.9.7  
Drawing no.: CW.ES.OV.3

Co-ordinate system: OSGB36 / British National Grid  
Scale: 1:7200 @ A3



0 0.07 0.14 0.21 0.28 0.35 km





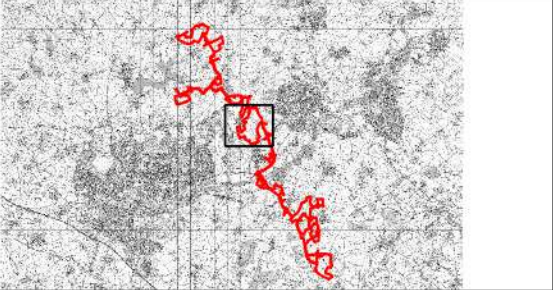


Title: 9.7.4 Otter Survey Results (Green Hill E)

Document: Volume 2  
Appendix 9.7 - Otter and Water Vole Surveys  
Environmental Statement (ES)

- Legend:
- Order Limits
  - Otter Suitability**
    - Good
    - Suitable but poor
  - Otter Evidence**
    - Print
    - Spraint
    - Cavity with potential for shelter

Data: IGP, 2025,  
Base Maps: © Crown copyright and database rights 2024 Ordnance Survey  
0100031673'  
Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024



APFP Regulation: 5(2)(a)  
Application Doc no.: EN010170/APP/GH6.3.9.7  
Drawing no.: CW.ES.OVW.4

Co-ordinate system: OSGB36 / British National Grid  
Scale: 1:11674 @ A3





486413

486675

486938

487200

487463

261713

261450

261188

260925



Title: 9.7.5 Otter Survey Results (Green Hill BESS)

Document: Volume 2  
Appendix 9.7 - Otter and Water Vole Surveys  
Environmental Statement (ES)

Legend:

Order Limits

**Otter Suitability**

Optimal

Good

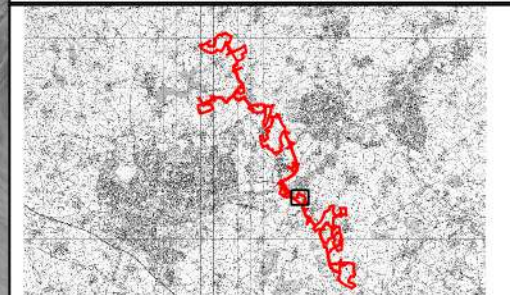
Suitable but poor

**Otter Evidence**

Print

Spraint

Data: IGP, 2025,  
Base Maps: © Crown copyright and database rights 2024 Ordnance Survey  
0100031673  
Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024



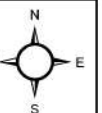
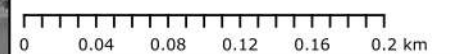
APFP Regulation: 5(2)(a)

Application Doc no.: EN010170/APP/GH6.3.9.7

Drawing no.: CW.ES.OV.5

Co-ordinate system: OSGB36 / British National Grid

Scale: 1:4200 @ A3





487331

488213

489094

489975

490856



Title: 9.7.6 Otter Survey Results (Green Hill F)

Document: Volume 2  
Appendix 9.7 - Otter and Water Vole Surveys  
Environmental Statement (ES)

Legend:

Order Limits

**Otter Suitability**

Optimal

Good

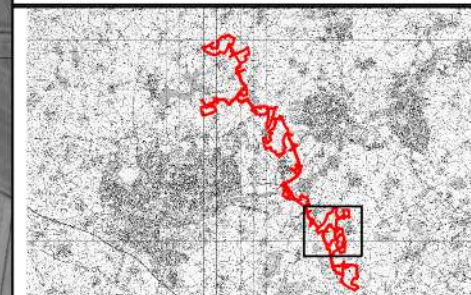
Suitable but poor

**Otter Evidence**

Spraint

Cavity with potential for shelter

Data: IGP, 2025,  
Base Maps: © Crown copyright and database rights 2024 Ordnance Survey  
0100031673  
Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024



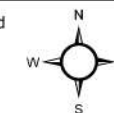
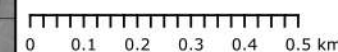
APFP Regulation: 5(2)(a)

Application Doc no.: EN010170/APP/GH6.3.9.7

Drawing no.: CW.ES.OWV.6

Co-ordinate system: OSGB36 / British National Grid

Scale: 1:14100 @ A3









479250

480000

480750

481500

482250

274500

273750

273000

272250



Title:  
9.7.8 Water Vole Survey Results (Green Hill A & A.2)

Document:  
Volume 2  
Appendix 9.7 - Otter and Water Vole Surveys  
Environmental Statement (ES)

Legend:

Order Limits

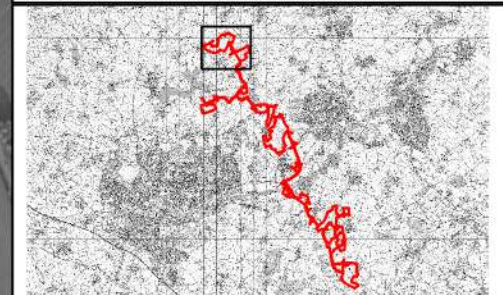
**Water Vole Suitability**

Good

Suitable but poor

Negligible

Data: IGP, 2025,  
Base Maps: © Crown copyright and database rights 2024 Ordnance Survey  
0100031673  
Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024



APFP Regulation: 5(2)(a)

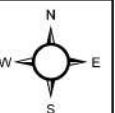
Application Doc no.: EN010170/APP/GH6.3.9.7

Drawing no.: CW.ES.OVW.8

Co-ordinate system: OSGB36 / British National Grid

Scale: 1:12000 @ A3

0 0.1 0.2 0.3 0.4 0.5 km





478800

479100

479400

479700

480000

269100

268800

268500

268200



Title:  
9.7.9 Otter Survey Results (Green Hill B)

Document:  
Volume 2  
Appendix 9.7 - Otter and Water Vole Surveys  
Environmental Statement (ES)

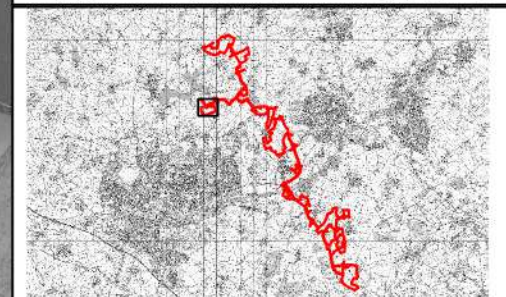
Legend:

Order Limits

**Water Vole Suitability**

Negligible

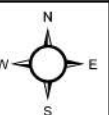
Data: IGP, 2025,  
Base Maps: © Crown copyright and database rights 2024 Ordnance Survey  
0100031673  
Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024



APFP Regulation: 5(2)(a)  
Application Doc no.: EN010170/APP/GH6.3.9.7  
Drawing no.: CW.ES.OVV.9

Co-ordinate system: OSGB36 / British National Grid

Scale: 1:4800 @ A3





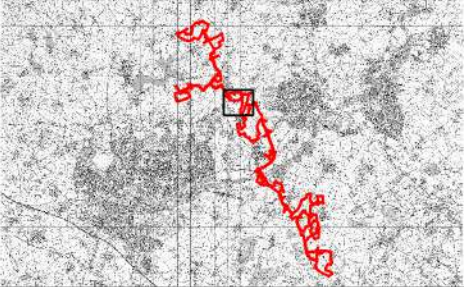


Title: 9.7.10 Otter Survey Results (Green Hill C & D)

Document: Volume 2  
Appendix 9.7 - Otter and Water Vole Surveys  
Environmental Statement (ES)

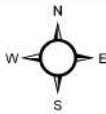
- Legend:
- Order Limits
  - Water Vole Suitability**
    - Suitable but poor
    - Negligible
  - Water Vole Evidence**
    - Possible Droppings
    - Possible Feeding Remains
    - Potential Burrow

Data: IGP, 2025,  
Base Maps: © Crown copyright and database rights 2024 Ordnance Survey  
0100031673'  
Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024



APFP Regulation: 5(2)(a)  
Application Doc no.: EN010170/APP/GH6.3.9.7  
Drawing no.: CW.ES.OWV.10

Co-ordinate system: OSGB36 / British National Grid  
Scale: 1:7200 @ A3





482850 483575 484300 485025 485750 486475



Title: 9.7.11 Otter Survey Results (Green Hill E)

Document: Volume 2  
Appendix 9.7 - Otter and Water Vole Surveys  
Environmental Statement (ES)

Legend:

Order Limits

**Water Vole Suitability**

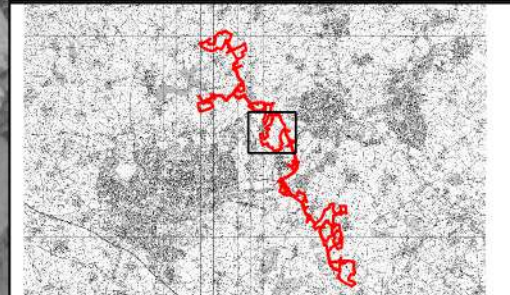
Suitable but poor

Negligible

**Water Vole Evidence**

Dead Water Vole

Data: IGP, 2025,  
Base Maps: © Crown copyright and database rights 2024 Ordnance Survey  
0100031673'  
Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024



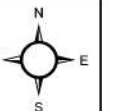
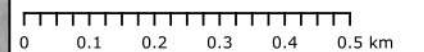
APFP Regulation: 5(2)(a)

Application Doc no.: EN010170/APP/GH6.3.9.7

Drawing no.: CW.ES.OWV.11

Co-ordinate system: OSGB36 / British National Grid

Scale: 1:11600 @ A3





486413

486675

486938

487200

487463

261713

261450

261188

260925



Title: 9.7.12 Otter Survey Results (Green Hill BESS)

Document: Volume 2  
Appendix 9.7 - Otter and Water Vole Surveys  
Environmental Statement (ES)

Legend:

Order Limits

**Water Vole Suitability**

Optimal

Good

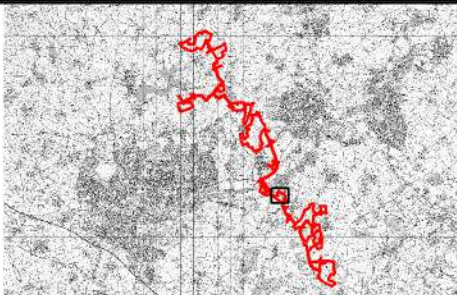
Suitable but poor

Negligible

**Water Vole Evidence**

Feeding Remains

Data: IGP, 2025,  
Base Maps: © Crown copyright and database rights 2024 Ordnance Survey  
0100031673  
Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024



APFP Regulation: 5(2)(a)

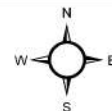
Application Doc no.: EN010170/APP/GH6.3.9.7

Drawing no.: CW.ES.OWV.12

Co-ordinate system: OSGB36 / British National Grid

Scale: 1:4200 @ A3

0 0.04 0.08 0.12 0.16 0.2 km





487331

488213

489094

489975

490856



Title: 9.7.13 Otter Survey Results (Green Hill F)

Document: Volume 2  
Appendix 9.7 - Otter and Water Vole Surveys  
Environmental Statement (ES)

Legend:

Order Limits

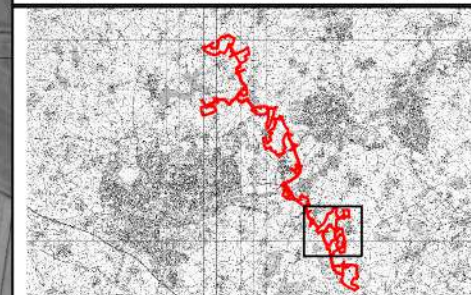
**Water Vole Suitability**

Good

Suitable but poor

Negligible

Data: IGP, 2025,  
Base Maps: © Crown copyright and database rights 2024 Ordnance Survey  
0100031673'  
Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024



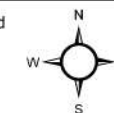
APFP Regulation: 5(2)(a)

Application Doc no.: EN010170/APP/GH6.3.9.7

Drawing no.: CW.ES.OVW.13

Co-ordinate system: OSGB36 / British National Grid

Scale: 1:14100 @ A3





489375 489844 490313 490781 491250 491719



Title: 9.7.14 Otter Survey Results (Green Hill G)

Document: Volume 2  
Appendix 9.7 - Otter and Water Vole Surveys  
Environmental Statement (ES)

Legend:

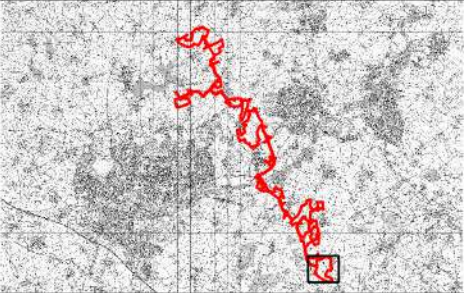
Order Limits

**Water Vole Suitability**

Suitable but poor

Negligible

Data: IGP, 2025,  
Base Maps: © Crown copyright and database rights 2024 Ordnance Survey  
0100031673  
Imagery ©2024 Landsat / Copernicus, Maxar Technologies, Map Data ©2024



APFP Regulation: 5(2)(a)

Application Doc no.: EN010170/APP/GH6.3.9.7

Drawing no.: CW.ES.OWV.14

Co-ordinate system: OSGB36 / British National Grid

Scale: 1:7500 @ A3

