Lime Down
Solar Park

Environmental Statement

Volume 3, Appendix 9-6: Otter and Water Vole Survey Report

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List of Contents

List of Tables

Appendix 9-6: Otter and Water Vole Survey Report

1.1 Introduction

1.1.1 Clarkson and Woods Limited has been commissioned by Lime Down Solar Park Limited (the Applicant) to conduct a suite of ecological surveys across the Lime Down Solar PV Sites and Cable Route Corridor (CRC), including surveys for otters *Lutra lutra* and water voles *Arvicola amphibius*.

1.1.2 Otter and water vole surveys have been carried out on suitable waterbodies within the Study Area (described below) for the Solar PV Sites and immediately adjacent land, between September 2023 and April 2025. All watercourses within the CRC have been subject to a habitat suitability assessment only.

1.1.3 Surveys followed a methodology aligned with best practice guidance, as described within the Water Vole Mitigation Handbook (Ref 9-6-1) and the Water Vole Conservation Handbook (Ref 9-6-2), and was informed by consultation with Natural England, Wiltshire Council, and the Environment Agency.

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 9-6-3).

Aims

1.1.5 Surveys for otter and water vole were undertaken to assess the suitability of habitats within the Study Area for the species, establish presence or likely absence of these species from within the Solar PV Sites, to ensure that the 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.

1.1.6 The Study Area encompasses all land within the Solar PV Sites and CRC. The Study Area also includes all land at the Solar PV Sites identified within the Development Area at Preliminary Environmental Information Report (PEIR) stage; the Order Limits has since been refined, but the survey data for these areas has been presented in this report to provide additional context to the evaluation of otters and water voles within the Solar PV Sites and immediately adjacent land.

1.1.7 This report details the methods and results of the surveys undertaken, and a brief evaluation of each species in relation to the Scheme.

1.1.8 This information will be used within **ES Volume 1, Chapter 9: Ecology and Biodiversity, EN010168/APP/6.1** 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.

Study Area

1.1.9 A detailed description of the Scheme is provided within **ES Volume 1, Chapter 3: The Scheme [EN010168/APP/6.1]** and in **ES Volume 1, Chapter 9: Ecology and Biodiversity, [EN010168/APP/6.1]** in relation to the ecology of the Solar PV Sites and CRC, and the habitats present.

Solar PV Sites (Lime Down A-E)

1.1.10 Lime Down A-E predominantly comprise large, open and relatively flat arable fields of varying crop types; with some, generally smaller, fields of permanent grassland. Fields within the Solar PV Sites are bounded by an extensive network of hedgerows, largely species-rich in composition, and agricultural drainage ditches with typically narrow field margins, where present. A large number of mature trees are present within hedgerows, as well as a small number of individual trees within fields. The habitats within the Solar PV Sites are generally contiguous with the surrounding landscape, which is agricultural in character. The land to the north and west of the Solar PV Sites rises gently to form the hills and valleys associated with the Cotswolds National Landscape, part of which lies adjacent to the Order Limits.

1.1.11 A small number of woodland parcels are present within the Solar PV Sites, forming part of a network of woodland habitat in the surrounding landscape, with several parcels located immediately adjacent to the Order Limits. Several ponds are present within the Solar PV Sites, constituting part of a wider pond network, with a relatively high number of ponds within the surrounding land. Ditches within the Solar PV Sites are largely dry, with wet ditch features generally concentrated within Lime Down D. The watercourses, known as Gauze Brook and Gabriel's Well, run through Lime Down D and E, respectively.

Cable Route Corridor

1.1.12 The CRC runs for approximately 22 km from the Solar PV Sites to the Existing National Grid Melksham Substation. The CRC is of similar character to the Solar PV Sites; habitats generally comprise agricultural fields bounded by hedgerows and ditches, with occasional ponds and blocks of woodland. Several watercourses, railways, and roads, including the M4, transect the route.

Quality Assurance

1.1.13 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.

1.1.14 The competence of all field surveyors has been assessed by Clarkson and Woods with respect to the CIEEM Competencies for Species Survey (Ref 9-6-4).

1.1.15 This report has been prepared in accordance with the relevant British Standard: *BS42020: 2013 – Biodiversity: Code of Practice for Planning and Development* (Ref 9-6-5). 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 Scheme 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 2 km of the Solar PV Sites and within 500 m of the CRC was obtained from Wiltshire and Swindon Biodiversity Records Centre (WSBRC); and
- The MAGIC website was consulted for records of European Protected Species (EPS) licences issued for mitigation projects concerning otter within 2 km of the Order Limits (Ref 9-6-6).

1.2.3 The desk study also included a review of relevant national and local planning policy and legislation in relation to otters and water voles.

1.2.4 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.

1.2.5 The chosen, standard, search radii are considered to remain appropriate when considering the potential for cumulative impacts from other solar development proposals.

Survey Methods

Solar PV Sites (Lime Down A-E)

Habitat Suitability Assessment

1.2.6 Following the Extended UKHabitat Surveys completed at the Solar PV Sites, the likelihood of waterbodies within the Sites to support otters and water voles was evaluated to determine where further survey would be most appropriate. Habitat suitability and connectivity were primarily considered in determining which waterbodies would be subject to further survey. Extended UKHabitat Surveys comprised classification of all habitat types present on site and considered their potential value for protected species. Full Extended UKHabitat Survey methodology is presented within **ES Volume 3, Appendix 9-1: Ecological Baseline Report, [EN010168/APP/6.3].**

1.2.7 Water voles typically require water year-round within watercourse channels, or at least channels which routinely hold water, in order to evade predators. This species also requires earthy banks of suitable profile to enable burrowing, as well as continuous swathes of bankside and/or emergent vegetation crucial for foraging. In order to sustain healthy and stable populations, water voles also require connectivity of habitats to allow dispersal of individuals and expansion of colony ranges.

1.2.8 Otters require consistently wet, unpolluted channels, generally faster flowing, to sustain suitable prey, such as fish and aquatic invertebrates. Optimal habitat for this species will also include secluded areas of vegetation, natural cavities in banksides, tree roots and rocky crevices, and other structures (including man-made ones) which can be used for holt sites and above-ground resting places (or couches). Otters also require riparian connectivity within the landscape for commuting between holt sites and foraging grounds; 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 Many of the ditches within the Solar PV Sites were completely dry or considered likely only to hold for a few months of the year, and so these watercourses were ruled out from further survey. 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).

1.2.10 Each habitat suitability assessment considered the following factors:

- Water quality;
- Water-level regime;
- Channel dimensions;
- Bank type and material;
- Vegetation for cover and food sources (water voles);
- Shading and presence of trees/scrub;

- Predation (water voles) and competition; and
- Habitat management.

1.2.11 The above criteria were then used to classify the suitability of watercourses 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 residual 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; or
- 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/foraging, especially where connected to other suitable habitat, but habitat highly unlikely to sustain a residual population of this species.

Otter & Water Vole Survey

1.2.12 Further surveys of the waterbodies which were determined to be suitable for otters and water voles and reasonably likely to be occupied (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.

1.2.13 The total watercourse length determined as suitable for further survey comprised 16.29 km of ditches and streams throughout the Solar PV Sites. 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 Solar PV Sites, surveyors would complete spot checks between every 50-100 m of 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 10 m length of watercourse. 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.

1.2.14 Surveys were aligned with good practice guidelines contained within Natural England Guidance (Ref 9-6-7) (in the case of otters), and in line with best practice guidance, as described in the Water Vole Mitigation Handbook and the Water Vole Conservation Handbook (in the case of water voles). Two survey

visits were undertaken at each watercourse, one in the autumn and one in the spring, in accordance with Mammal Society guidance (**Table 9-6-2** refers). Observations of otter and water vole field signs and any significant changes in habitat suitability were recorded during both survey visits.

1.2.15 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. Where this was not possible, the limitations have been addressed in the relevant section below.

1.2.16 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.

1.2.17 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.

1.2.18 All data were collected using tablet-based proforma which were georeferenced for later mapping.

Cable Route Corridor

1.2.19 During the Extended UKHabitat Surveys of the CRC, waterbodies were assessed for their potential to support otters and water voles. Habitat suitability

assessments were undertaken using the methodology provided in Paragraph 1.2.6 above, and waterbodies were classified as being of Optimal, High, Suitable but Poor, or Negligible suitability for each species.

1.2.20 For the purposes of this assessment and that presented in **ES Volume 1, Chapter 9: Ecology and Biodiversity, EN010168/APP/6.1**, those waterbodies within the CRC that were assessed as having potential to support otters and/or water voles are assumed to support the species. All such habitats with the CRC are anticipated to be predominantly retained, with any temporary impacts on habitats for access and cable installation works expected to be reinstated following a relatively short construction period. As such no species-specific survey has been undertaken to identify the presence or likely absence of this species, however their presence within all suitable habitat has been assumed on a precautionary basis, therefore.

Survey Personnel

1.2.21 **Table 9-6-1** presents the surveyor details for the individuals involved in undertaking otter and water vole surveys completed between September 2023 and June 2025, with survey dates presented in **Table 9-6-2**.

Table 9-6-1: Otter and Water Vole Survey Personnel

Surveyor Name and Relevant Qualifications	Surveyor Details and Experience
Peter Timms BSc MSc	MCIEEM, 12 year's survey experience
Joel Wright BSc MSc	MCIEEM, 12 year's survey experience
Charlie Durigan BSc PgCert MSc	ACIEEM, 9 years' survey experience
Molly Brown BSc MSc	ACIEEM, 3 year's survey experience
Sarah Richards BSc MSc	Qualifying CIEEM, 4 year's survey experience
Miranda Jones BSc	Qualifying CIEEM, 3 year's survey experience
Will Fisher MGeol MSc	Qualifying CIEEM, 2 years' survey experience
Bryan Tan MBiolSci	2 year's survey experience
Holly Chapman-White BSc MSc	1 year's survey experience

Table 9-6-2: Otter and Water Vole Survey Dates (Solar PV Sites Only)

Survey Visit	Survey Date
Sites Lime Down A - E	
Visit 1 (Autumn)	19/09/2023, and 25/09/2023
Visit 2 (Spring)	21/05/2024, and 22/05/2024
Additional Land at Lime Down C (added March 2024)	
Visit 1 (Autumn)	26/09/2024

Visit 2 (Spring)	22/05/2024
Additional Land at Lime Down C (added June 2024)	
Visit 1 (Autumn)	26/09/2024
Visit 2 (Spring)	15/04/2025

Evaluation of Importance

1.2.22 The importance of the Solar PV Sites and CRC 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 9-6-8). 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.

1.2.23 A detailed methodology for the evaluation of baseline biodiversity importance is provided in **ES Volume 3, Appendix 9-1: Ecological Baseline Report, [EN010168/APP/6.3].**

1.2.24 To inform the evaluation in this report, the fields signs recorded indicating presence of otters and water voles 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.

Limitations

Desk Study

1.2.25 The desk study data presented within the report should not be seen as exhaustive. Data obtained from within the search radii is highly unlikely to constitute a complete record of habitats and species within the search radii. It is therefore possible that otters and/or water voles may occur within the vicinity of the Scheme that have not been identified within the desk study.

1.2.26 The data search for the Solar PV Sites was obtained in 2023 and for the CRC in 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 radii.

Field Surveys

1.2.27 The bankside vegetation along certain sections of the watercourses within the Study Area 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.

1.2.28 Otters have no defined breeding season, and the breeding holt is kept deliberately obscure by the female, so locating holts can be challenging, especially when vegetation is particularly dense.

1.2.29 Where water voles live at low densities or an area is at the edge of their range, field signs can be difficult to locate.

1.2.30 Populations of both species may expand over time and consequently may migrate onto site after surveys are completed.

1.2.31 These surveys offer only brief ‘snapshots’ of the Solar PV Sites and take no account of differences over time, or of any species which might choose to take up residence 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.

1.2.32 It should be noted that the survey conducted at Lime Down C and D on 26 September 2024 was carried out following regular periods of heavy rain in the preceding weeks. Although no significant rainfall had been recorded in the days immediately prior to the survey, water levels were elevated. The possibility that field signs may have been under-recorded during this visit should be considered.

1.2.33 As of August 2025, approximately 17 ha of land within the CRC has not been accessed for ecological survey due to a lack of access permission. Habitats, including watercourses if present, within these areas have therefore not been assessed for their potential to support otter and water vole. An assumption of the likely habitats present has been made, based on available desk study information (using satellite imagery and open-source datasets, where relevant), and the context of other habitats present within the local landscape. The precautionary principle has been applied when considering the suitability of habitats for both species. Access agreements are being sought for these areas, and it is intended for all currently un-surveyed areas of the CRC to be assessed for their suitability to support otter and water vole. Following completion of the outstanding survey work, the results of the surveys will be submitted into the Examination and amendments to this appendix will be made, if required.

1.3 Results

1.3.1 This section contains the desk study results, along with the results of otter and water vole surveys completed across the Study Area.

Desk Study

1.3.2 A summary of desk study results relating to otters and water voles is provided below. Refer to **ES Volume 3, Appendix 9-1: Ecological Baseline Report, [EN010168/APP/6.3]** for full data search results and associated figures.

Solar PV Sites (Lime Down A-E)

1.3.3 A total of eight records of otter and 23 records of water vole were returned by WSBRC during the desk study using the search parameters set out within Paragraph 1.2.2.

1.3.4 A single record of American mink *Neovison vison* (an invasive predator of water voles) was also returned.

Cable Route Corridor

1.3.5 A total of five records of otter and three records of water vole were returned during the desk study using the search parameters set out within Paragraph 1.2.2.

1.3.6 1 record of American mink was also returned with 500 m of the CRC, at a watercourse approximately 0.13 km south of the Order Limits.

Otter and Water Vole Field Surveys

Solar PV Sites (Lime Down A-E)

Watercourses Surveyed

1.3.7 Following the methodology set out in Paragraph 0, the watercourses within the Solar PV Sites that would be subject to further survey were determined and are presented in **Table 9-6-3**: Watercourses Subject to Detailed Otter and Water Vole Survey below and in **ES Volume 2, Figure 9-6-1: Waterbodies Subject to Detailed Otter and Water Vole Surveys – Solar PV Sites, [EN010168/APP/6.2]**.

Table 9-6-3: Watercourses Subject to Detailed Otter and Water Vole Survey

Watercourse Type	Boundary Reference	No. of Boundaries	Total Length
Lime Down A			
Ditch	A11_B5, A11_B6, and A11_B7	3	0.479 km
Lime Down B			

Ditch	B3_B3, B4_B2, B6_B5, B8_B4, B11_B1, B11_B3, and B11_B4	7	1.624 km
Lime Down C			
Stream	C28_B1	1	0.295 km
Ditch	C7_B3, C22_B1, C24_B2, C24_B4, C32_B1, C33_B4, and C36_B6	7	2.129 km
Lime Down D			
Priority River	Gauze Brook (D13_B1, D13_B2, D14_B4, D16_B1, and D17_B1)	5	1.505 km
Ditch	D1_B2, D1_B3, D1_B4, D2_B1, D3_B3, D4_B1, D5_B2, D6_B2, D6_B4, D7_B2, D7_B3, D7_B4, D9_B1, D9_B2, D11_B1, D11_B2, D11_B3, D12_B1, D12_B4, D13_B3, D16_B2, D17_B6, and D18_B1	23	8.578 km
Lime Down E			
Stream	Gabriel's Well (E22_B3, E23_B1, and E26_B4), E18_B3, and E19_B2	5	1.514 km
Ditch	E25_B2	1	0.165 km

Otter

1.3.8 Watercourses throughout the Solar PV Sites were assessed as being of variable suitability for otter, with ditches exclusively comprising sub-optimal habitat, and rivers and streams typically being of higher quality. Woodland habitat within and immediately adjacent the Solar PV Sites provided numerous opportunities for holt and couch site creation, and riparian habitats, particularly associated with the larger watercourses, offered connective corridors between woodland blocks and aquatic habitats.

1.3.9 Gauze Brook, running through Lime Down D, was identified as the only area of habitat of optimal suitability for otter. The watercourse is listed as a priority river and had fast-flowing water up to 60 cm deep which represented good hunting habitat for the species. Trees and scrub were present along the earth banks, with the vegetation cover and exposed roots creating opportunities for creation of holts or couch sites.

1.3.10 The other notable watercourse within the Solar PV Sites, Gabriel's Well at Lime Down E, was assessed as being of good suitability for otter. The channel was considered likely to hold water and support a fish population year-round, and riparian vegetation also provided sheltering opportunities for the species.

1.3.11 All other surveyed watercourses within the Solar PV Sites were considered to be suitable for otter, but of relatively poor habitat quality, and largely comprised agricultural drainage ditches. Water levels in the ditch network fluctuate throughout the year and many were recorded as dry during the surveys; ditches are therefore unlikely to support sufficient prey to constitute key foraging habitat for otter and so are more likely to form commuting pathways for the species.

1.3.12 None of the surveyed watercourses were classified as being of negligible suitability for otter due to their value as commuting features. Indeed, even those ditches determined as unsuitable for further survey are likely to act as conduits for otter dispersal between watercourses within the local landscape and the Avon River Catchment.

1.3.13 Ponds which hold water more frequently and are situated in proximity to suitable watercourses may also support populations of fish and amphibians, which otters may utilise for foraging.

1.3.14 The results of habitat suitability assessments for otter of watercourses within the Solar PV Sites are summarised in **Table 9-6-4** below. Habitat suitability and otter field signs are shown in **ES Volume 2, Figure 9-6-2 to 9-6-6: Otter Survey Results – Solar PV Sites [EN010168/APP/6.2]**.

Table 9-6-4: Habitat Suitability Assessment at Solar PV Sites - Otter

Suitability for Otters	Boundary Reference	Number of Boundaries	Total Length
Lime Down A			
Suitable but Poor	A11_B5, A11_B6, and A11_B7	3	0.479km
Lime Down B			
Suitable but Poor	B11_B1, B11_B3, B11_B4, B3_B3, B4_B2, B6_B5, and B8_B4	7	1.624km
Lime Down C			
Good	C28_B1	1	0.295km
Suitable but Poor	C22_B1, C24_B2, C24_B4, C32_B1, C33_B4, C36_B6, and C7_B3	7	2.129km
Lime Down D			
Optimal	D13_B1, D13_B2, D14_B4, D16_B1, and D17_B1	5	1.505km
Suitable but Poor	D1_B2, D1_B3, D1_B4, D11_B1, D11_B2, D11_B3, D12_B1, D12_B4, D13_B3, D16_B2, D17_B6, D18_B1, D2_B1, D3_B3, D4_B1, D4_B3, D5_B2, D6_B2, D6_B4, D7_B2, D7_B3, D7_B4, D9_B1, and D9_B2	24	8.578km

Lime Down E			
Good	E22_B3, E23_B1, and E26_B4	3	0.867km
Suitable but Poor	E18_B3, E19_B2, and E25_B2	3	0.812km

1.3.15 Otter field signs were only recorded within Lime Down D, along Gauze Brook. Spraints were recorded on two separate occasions (September 2023 and May 2024), situated on prominent features within the watercourse, including concrete blocks, stones and beneath a bridge, as is typical of the species.

1.3.16 Possible otter prints were also recorded on exposure mud on the banks of D17_B6 (directly connected with Gauze Brook), at the edge of a small woodland block. The site was considered to be a suitable lay-up location for otter, with exposed roots on the bank-top providing potential holt creation opportunities, although no holts were found.

1.3.17 Gauze Brook and the associated riparian habitats presented key habitat for otters within the Solar PV Sites, with records of the species focused on the priority river. Wooded banks provided opportunities for couch creation/lay-up sites, and the nearby Bradfield Wood and West Park Wood were considered likely to provide suitable habitat for holt sites. The wider ditch and watercourse network throughout the Solar PV Sites is likely to offer greater value as commuting habitat for otters moving between rest sites and foraging grounds, rather than forming part of core territories.

Water Vole

1.3.18 Watercourses throughout the Solar PV Sites also varied in their suitability for water voles. The majority of watercourses were considered to be generally suitable for water vole, although of poor habitat quality, with no watercourses representing optimal habitat for the species.

1.3.19 Watercourses of good suitability for water voles were concentrated in Lime Down D, including Gauze Brook and several hydrologically linked ditches within the Site, as well as a small section of stream and a single ditch in Lime Down C. These watercourses were considered likely to hold water throughout the year. Bankside and emergent vegetation, including grasses and reeds, was frequently noted within the watercourses, constituting valuable foraging resources for water vole, as well as providing shelter on the banks for burrow creation.

1.3.20 The vast majority of watercourses elsewhere were assessed as providing suitable but poor habitat for water voles, with variable water levels and absence of suitable forage frequently noted as the key limiting factors on suitability. Watercourses throughout the Solar PV Sites were also typically recorded alongside hedgerows and were therefore subject to some degree of shading on

at least one bank. This reduces the suitability of the riparian vegetation and also provides refuge for potential predators of water vole.

1.3.21 A small number of ditches within the Solar PV Sites were considered to be of negligible suitability for water vole, all of which were dry during the surveys and were noted by surveyors as being unlikely to hold water for much of the year. The ditches were generally isolated agricultural drainage features with little to no connectivity to more permanent watercourses. Furthermore, the banks of these ditches were heavily shaded, with abundant scrub/shrub species. Extensive shading and overhanging woody vegetation limited the availability of sunlight to bankside plants, and plants suitable for water vole foraging were typically absent from these ditches as a result.

1.3.22 The results of habitat suitability assessments of watercourses within the Solar PV Sites for water voles are summarised in **Table 9-6-5** below. Habitat suitability and water vole field signs are shown in the **ES Volume 2, Figure 9-6-7 to 9-6-11: Water Vole Survey Results – Solar PV Sites [EN010168/APP/6.2].**

Table 9-6-5: Habitat Suitability Assessment at Solar PV Sites – Water Vole

Suitability for Water Voles	Boundary Reference	Number of Boundaries	Total Length
Lime Down A			
Suitable but Poor	A11_B5, A11_B6, and A11_B7	3	0.479 km
Lime Down B			
Suitable but Poor	B3_B3, B4_B2, B6_B5, and B8_B4	4	1.040 km
Negligible	B11_B1, B11_B3, and B11_B4	3	0.584 km
Lime Down C			
Good	C22_B1 and C28_B1	2	0.656 km
Suitable but Poor	C24_B2, C24_B4, C32_B1, C33_B4 and C36_B6	5	1.221 km
Negligible	C7_B3	1	0.547 km
Lime Down D			
Good	D6_B2, D6_B4, D7_B2, D9_B1, D9_B2, D13_B1, D13_B2, D13_B3, D14_B4, D16_B1, and D17_B1	11	3.444 km
Suitable but Poor	D1_B2, D1_B3, D1_B4, D2_B1, D3_B3, D4_B1, D4_B3, D5_B2, D7_B3, D7_B4, D11_B1, D11_B2, D11_B3, D12_B1, D12_B4, D16_B2, and D17_B6	17	6.475 km
Negligible	D18_B1	1	0.164 km

Suitability for Water Voles	Boundary Reference	Number of Boundaries	Total Length
Lime Down E			
Suitable but Poor	E18_B3, E19_B2, E22_B3, E23_B1, E25_B2, and E26_B4	6	1.679 km

1.3.23 No evidence of water vole was recorded in Lime Down A, B and C, with only field signs of smaller vole species and rat *Rattus norvegicus* recorded within these areas.

1.3.24 The majority of water vole field signs were recorded at Lime Down D, with the highest density of records centred on the dich at D9_B2. Several burrows were recorded along the watercourse, with water vole latrines also noted. The ditch ran between Fields D9 and D10, held approximately 10 cm of water, and was largely unshaded, with no hedgerow present. The bankside vegetation was dominated by grasses, with frequent reeds observed, providing plentiful foraging opportunity and cover for water voles. A 1 m wide, uncultivated, grassy margin was recorded on either side of the ditch. This ditch represented a focal point for water vole activity within the Solar PV Sites and is considered key habitat for the species.

1.3.25 Field signs were also recorded in suitable ditches directly connected to D9_B2, namely burrows, indicating dispersal of the population throughout Lime Down D.

1.3.26 No evidence was recorded within Gauze Brook, despite the watercourse representing suitable habitat. However, water vole field signs were recorded in connected watercourses located to the north and south of the river, suggesting it may have value for the species in terms of connectivity within Lime Down D.

1.3.27 Possible water vole burrows were recorded along Gabriel's Well in Lime Down E, however, evidence of American mink was also recorded along the same watercourse at E26_B4; a mink scat was noted by the surveyor in September 2023, alongside anecdotal evidence from farmers of mink in the area at Lime Down E. Mink are voracious predators of water voles, and so it is considered unlikely that a population of water vole will remain at Lime Down E. Large burrows recorded along Gabriel's Well were, therefore, more likely attributable to rat.

Cable Route Corridor

Otter

1.3.28 Watercourses within the CRC were generally assessed as being suitable for otter, with the majority of watercourses considered to provide suitable but poor habitat for the species. Water levels in these watercourses fluctuate frequently and so are unlikely to be used for foraging but may form important commuting

corridors for otter through the landscape. Given the relatively ubiquitous presence of otters on watercourses in lowland England following recent population recoveries, it can be assumed that all watercourses are used by this species to some extent on a precautionary basis.

1.3.29 Good quality habitat comprised CRR1, a section of Byde Mill Brook, and CRR7, a tributary of Pudding Brook. These watercourses were considered likely to support prey for otter, as well as offering commuting value. Both watercourses flow through wooded riparian corridors which provide suitable habitat for rest site and holt creation, although none were found during the surveys.

1.3.30 The results of habitat suitability assessments of watercourses within the CRC for otters are summarised in **Table 9-6-6**Table 9-6-5 below. Habitat suitability is shown in **ES Volume 2, Figure 9-6-12 to 9-6-16: Otter Survey Results – Cable Route Corridor [EN010168/APP/6.2].**

Table 9-6-6: Habitat Suitability Assessment at Cable Route Corridor - Otter

Suitability for Otters	Boundary Reference	Number of Boundaries	Total Length
Good	CRR1 and CRR7	2	0.249 km
Suitable but Poor	CRD1, CRD2, CRD3, CRD5, CRD6, CRR2, CRR3, CRR4, CRR5, CRR6, and CRR8	11	2.195 km

Water Vole

1.3.31 Good quality water vole habitat was limited within the CRC, restricted to three watercourses. Byde Mill Brook (CRR1), Pudding Brook (CRR6), and CRR3, a short section of watercourse to the north of the railway surrounded by a small cluster of ponds, represent good quality habitat owing to likely permanent water within the channels, steep earth banks and presence of suitable food plants, such as reeds and grasses.

1.3.32 The majority of watercourses within the CRC comprised suitable but poor habitat for water vole, as a result of likely fluctuating water levels, bank substrate, shading, and an absence of foraging opportunities and in-channel vegetation.

1.3.33 One watercourse within the CRC was assessed as being of negligible value for water vole: CRR8, a section of Gauze Brook upstream of the Solar PV Sites, which was dry at the time of survey and held no aquatic/marginal vegetation indicative of regular inundation. This section of watercourse also had shallow banks and frequent bankside trees resulting in heavy shading of the channel. It should also be noted that dry ditch features (not categorised in **Table 9-6-7** below) were also considered to be of negligible value for the species.

1.3.34 The results of habitat suitability assessments of watercourses within the CRC for water voles are summarised in Table 9-6-6Table 9-6-5 below. Habitat suitability is shown in **ES Volume 2, Figure 9-6-17 to 9-6-21: Water Vole Survey Results – Cable Route Corridor [EN010168/APP/6.2].**

Table 9-6-7: Habitat Suitability Assessment at Cable Route Corridor – Water Vole

Suitability for Otters	Boundary Reference	Number of Boundaries	Total Length
Good	CRR1, CRR6 and CRR3	3	0.311 km
Suitable but Poor	CRD1, CRD2, CRD3, CRD5, CRD6, CRR2, CRR4, CRR5, and CRR7	9	2.020 km
Negligible	CRR8	1	0.113 km

1.4 Evaluation and Conclusion

1.4.1 This section sets out a summary of survey results and an evaluation of the populations of otter and water vole within the Study Area with the potential to be impacted by the Scheme.

Evaluation

Solar PV Sites (Lime Down A-E)

Otter

1.4.2 Otter field signs were recorded solely within Lime Down D, the majority of which were associated with the priority river, Gauze Brook. Larger watercourses, including four rivers and streams, provide optimal habitat for this species and are able to support foraging. The network of agricultural drainage ditches within the Solar PV Sites are of reduced value and are likely to support commuting individuals only.

1.4.3 Limited terrestrial habitats within the Solar PV Sites and in proximity to key watercourses were considered suitable for holt and couch creation. These were namely the numerous off-site woodland blocks connected to watercourses by riparian vegetation, although no such sites were confirmed during the surveys as off-site habitats were not searched for evidence of otter activity.

1.4.4 Overall, habitats within the Solar PV Sites represent a relatively well-connected network for otters, which were confirmed to be present at Lime Down D. Otter is a wide-ranging species, and so their presence or future presence within additional areas within the Solar PV Sites cannot be ruled out where evidence has not yet been recorded.

1.4.5 Otter at Lime Down A-E was considered to be of **District Importance**, with Gauze Brook at Lime Down D representing key habitat for the species. This evaluation of importance reflects the value of habitats within the Scheme for otters, as well as their status as EPS and SPI.

Water Vole

1.4.6 Evidence of water voles was recorded within Lime Down D and E, although given the confirmed presence of American mink at Lime Down E it is unlikely that a water vole population will persist in this area. Numerous burrows were recorded at Lime Down D within the network of ditches associated with Gauze Brook.

1.4.7 The majority of surveyed watercourses across the Solar PV Sites represented suitable but poor habitat for water voles, with variable water levels and many dry ditches limiting connectivity for this species, including opportunities for expansion of the existing population at Lime Down D.

1.4.8 Water vole at Lime Down D was considered to be of **District Importance**. Water vole at Lime Down A, B, C, and E, if present, was considered to be of **Local Importance**. This evaluation of importance reflects the significance of the population at Lime Down D, particularly considering the presence of American mink in the river catchment, and the value of habitats across the Solar PV Sites for water vole, as well as their status as SPI.

Cable Route Corridor

1.4.9 Given that habitats within the CRC have been assessed as being of similar value to otter and water vole as the Solar PV Sites, and in the absence of detailed survey data, the importance of the CRC for both species is considered to be consistent with the Solar PV Sites. Water vole, if present, within the CRC are considered to be of **Local Importance**, and otter, if present, are considered to be of **District Importance**.

1.4.10 Both species have been assumed to be present in all suitable habitat on a precautionary basis.

Overall

1.4.11 When taking into account the population of water voles present at the Solar PV Sites and the assumed presence of this species in suitable habitat within the CRC, the Order Limits are considered to be of District Importance for water voles.

1.4.12 The Order Limits can also be considered to be **District Importance** for otters given the extent of suitable habitat for this species.

Conclusion

1.4.13 The presence of otters and water voles has been confirmed at Lime Down D, with Gauze Brook and connecting watercourses representing the focal point for activity within Lime Down D. Further suitable habitat for both species was recorded in each of Lime Down A-E, although surveys have not recorded evidence of water voles at Lime Down A, B, C, and E and this species is considered likely absent from these areas. Given the quality of habitats present within the CRC, the presence of otter and water vole within the CRC cannot be ruled out.

1.4.14 Appropriate avoidance, mitigation, compensation and enhancement measures relating to otter and water vole are detailed within the **ES Volume 1, Chapter 9: Ecology and Biodiversity, EN010168/APP/6.1.**

1.5 References

Ref 9-6-1 Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016) The Water Vole Mitigation Handbook (Mammal Society Mitigation Guidance Series). Mammal Society, London

Ref 9-6-2 Strachan, R., Moorhouse, T. and Gelling, M. (2011) Water Vole Conservation Handbook. Third Edition. Wildlife Conservation Research Unit, Oxford

Ref 9-6-3 CIEEM (February 2022) Code of Professional Conduct. [redacted]Accessed 19 August 2025]

Ref 9-6-4 CIEEM (2013) Competencies for Species Survey (CSS). [redacted]Accessed 19 August 2025]

Ref 9-6-5 The British Standards Institution (2013) BS42020: 2013 – Biodiversity: Code of Practice for Planning and Development. BSI Standards Ltd.

Ref 9-6-6 Available at: https://magic.defra.gov.uk/magicmap.aspx [Accessed 19 August 2025]

Ref 9-6-7 Natural England (2014). Otters: surveys and mitigation for development projects.

Ref 9-6-8 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: [redacted][Accessed 19 August 2025]