



Connah's Quay Low Carbon Power

Environmental Statement Volume IV Appendix 11-B: Terrestrial and Aquatic Ecology Baseline Surveys

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1. Ecology Baseline Surveys and Study Area

- 1.1.1 This report forms a technical appendix accompanying **Chapter 11: Terrestrial and Aquatic Ecology (EN010166/APP/6.2.11)** of the ES for the Connah's Quay Low Carbon Project (the 'Proposed Development').
- 1.1.2 This report (**Table 1**) presents an overview of the ecological baseline surveys, including desk studies, that have been or are planned to be carried out in connection with the Proposed Development.
- 1.1.3 The ecology baseline gathered or to be gathered includes appropriate study and survey areas in association with the Main Development Area, Construction and Indicative Enhancement Area (C&IEA), Proposed CO₂ Connection Corridor, Repurposed CO₂ Connection Corridor and Water Connection Corridor (hereafter referred to as the 'Construction and Operation Area') as shown on **Figure 3-3: Areas Described in the Environmental Statement (EN010166/APP/6.3)** sheets 6 to 8 and **Plate 3-2 of Chapter 3: Location of the Proposed Development (EN010166/APP/6.2.3)**.
- 1.1.4 The Accommodation Works Areas are considered in **Appendix 5-A: Environmental Screening of Accommodation Works (EN010166/APP/6.4)**.
- 1.1.5 Where relevant, this document provides cross-references to other supporting appendices which include further details of the ecological surveys and their results.

Table 1: Terrestrial and Aquatic Ecology Baseline Surveys and Study Area

Study/Survey	Study / Survey date	Study / Survey Area	Description	Report Reference
Desk Study	March 2024 August 2024 May 2024	<p>15 km study area around the Construction and Operation Area for Statutory Habitat Sites, Special Protection Areas (SPA's) Special Areas of Conservation (SAC's) Ramsar Sites, Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs) as well as for mobile species such as birds or marine mammals.</p> <p>2 km study area for the identification of non-statutory nature conservation sites and third-party records of protected and notable species.</p> <p>Up to 5 km from the Construction and</p>	<p>A desk-based study with North Wales Environmental Information Service (Cofnod) to identify international, national and other statutory designated sites, non-statutory designated sites and non-designated sites of interest, and protected and notable species, within proximity to the Proposed Development.</p> <p>Online resources have also been reviewed including Multi-Agency Geographic Information for the Countryside (MAGIC).</p> <p>Other specialist groups contacted for biological records include: Deeside Naturalist Society and North East Wales Amphibian and Reptile Network. The British Trust for Ornithology (BTO) was contacted for ornithological data. High tide and low tide WeBS (wetland bird) data was reviewed within selected official count sectors from the last five years.</p>	<p>Chapter 11: Terrestrial and Aquatic Ecology (EN010166/APP/6.2.11) of the Environmental Statement (EN010166/APP/6.2.11)</p> <p>Appendix 11-D: Ornithology Technical Appendix (EN010166/APP/6.4)</p> <p>Appendix 11-E: Great Crested Newt Technical Appendix (EN010166/APP/6.4)</p> <p>Appendix 11-F: Reptile Desk Study (EN010166/APP/6.4)</p> <p>Appendix 11-G: Bat Technical Appendix (EN010166/APP/6.4)</p>

Study/Survey	Study / Survey date	Study / Survey Area	Description	Report Reference
		<p>Operation Area for wetland bird data¹.</p> <p>Up to 2 km from the Construction and Operation Area for barn owl site records.</p>	<p>Flintshire bird recorder and Wirral Barn Owl Trust were consulted for any barn owl nest site records.</p>	
Preliminary Ecological Appraisal	November 2023	Terrestrial habitats within the Construction and Operation Area plus up to 50 m (where accessible).	<p>Habitat surveys mapped habitat types and assessed and reaffirmed the potential for protected species and/or habitats or species groups of nature conservation importance to occur on and within close proximity to the Construction and Operation Area (where accessible).</p> <p>A desk-based assessment based on aerial imagery of all habitats within the Construction and Operation Area using available aerial imagery (where not accessible for survey).</p>	Annex F of Appendix 11-C: Botany Technical Appendix (EN010166/APP/6.4)
UKHab survey and habitat condition assessment to	April to September 2024	Terrestrial habitats within the Construction and Operation Area plus up to 50 m (where accessible).	UKHab survey and habitat condition assessment within the Construction and Operation Area has been completed during the optimal survey	Appendix 11-C: Botanical Technical Appendix (EN010166/APP/6.4)

¹ 5 km was considered sufficient to gain an understanding of the way in which estuary birds utilise the Survey Area (as defined for wintering and passage birds in **Table 1**) and immediate surrounds and provides contextual information on importance.

Study/Survey	Study / Survey date	Study / Survey Area	Description	Report Reference
inform Net Benefit for Biodiversity (NBB)			<p>season based on the following methodology: UKHab Classification (Ref 1), Statutory Biodiversity Metric (Ref 2), and Chartered Institute of Ecology and Environmental Management (CIEEM) Preliminary Ecological Appraisal Guidance (Ref 3).</p> <p>Hedgerows within the Construction and Operation Area surveyed against the landscape and wildlife important hedgerow criteria of the Hedgerow Regulations 1997 (Ref 4).</p> <p>The survey reaffirms the potential habitats to support protected and/or notable fauna, specifically in association with the Proposed CO₂ Connection Corridor and Repurposed CO₂ Connection Corridor.</p>	
Botanical survey including National Vegetation Classification (NVC) surveys	May - July 2024	Accessible terrestrial habitats within the Construction and Operation Area.	Detailed NVC of the saltmarsh completed in accordance with Rodwell (2006) (Ref 5) and sparsely vegetated urban land (possible Open Mosaic Habitat) using specific criteria.	Appendix 11-C: Botanical Technical Appendix (EN010166/APP/6.4)

Study/Survey	Study / Survey date	Study / Survey Area	Description	Report Reference
Breeding, Passage and Wintering Bird Surveys	April 2022 to February 2023	The Main Development Area and C&IEA as well as adjacent areas	Monthly surveys were carried out by Aspect Ecology to support the assessment of breeding bird activity (April to July 2022), passage activity (April, May and July to November 2022) and winter activity (November 2022 to February 2023) at the Main Development Area and C&IEA. Wetland bird counts were also completed at various tide states.	Appendix 11-D: Ornithology Technical Appendix (EN010166/APP/6.4)
Wintering and Passage Bird Surveys (Wetland bird surveys)	November 2023 to October 2024	The Main Development Area including Water Connection Corridor and area of estuary and saltmarsh habitats up to 1.5 km (as visibility allows).	<p>Year-round waterbird surveys over a 12-month period (November 2023 to October 2024, inclusive), with 4 No. visits made in each month following modified Wetland Bird (WeBS) methodology (Ref 6) utilising point sector counts across various tidal states.</p> <p>The surveys are timed to take place at the appropriate high and low water periods to cover a selection of spring and neap tides. Each month these survey visits include 2 No. nocturnal survey visits.</p> <p>The survey techniques in each month comprises a combination of walked transects and monitoring of</p>	Appendix 11-D: Ornithology Technical Appendix (EN010166/APP/6.4)

Study/Survey	Study / Survey date	Study / Survey Area	Description	Report Reference
			key habitats, including the use of spotting scopes and also thermal imaging scopes to record birds at night.	
Breeding Bird surveys	March 2024 to July 2024 (one visit per month for five months); and April 2024 to June 2024 (an additional four visits)	The Main Development Area including the Water Connection Corridor, Proposed CO ₂ Connection Corridor and C&IEA and study area of estuary and saltmarsh habitats up to 1.5 km (as visibility allows)	<p>Common Bird Census (CBC) methodology (Ref 7) of all terrestrial habitats and surrounding saltmarsh. The survey comprises five monthly visits March to July, inclusive. The survey in each month comprises a walked transect.</p> <p>An additional four visits in April to June were conducted to identify the presence of any breeding wader species within the Main Development Area, C&IEA or intertidal habitats. These are targeted surveys, in addition to the wetland surveys, to monitor the most suitable habitats for breeding waders in these locations. Approximate bird territories will be extrapolated from the survey data in accordance with the territory mapping methods based on Gilbert et al. (1998) (Ref 8).</p>	Appendix 11-D: Ornithology Technical Appendix (EN010166/APP/6.4)
Barn Owl	July to September 2024	Data for up to 5 km from the Site.	Desk based assessment of the potential for barn owl to be present.	Appendix 11-D: Ornithology Technical

Study/Survey	Study / Survey date	Study / Survey Area	Description	Report Reference
			Utilising records from Deeside Naturalist Society, Cofnod, Flintshire Bird Recorder and Wirral Barn Owl Trust.	Appendix (EN010166/APP/6.4)
Great crested newt <i>Triturus cristatus</i> habitat suitability assessments including environmental DNA (eDNA)	15 th April to end of June 2024 15 April 2025 April and June 2025	Ponds within the Construction and Operation Area	Habitat Suitability Index (HSI) completed at ponds on and within 500 m of the Construction and Operation Area (where applicable). The HSI assessment evaluated the suitability of accessible ponds for great crested newt based on methodology of Oldham et al (2000) (Ref 9). Water samples were taken from accessible ponds in accordance with the method of Biggs et al (2014) (Ref 10) and analysed for great crested newt eDNA at a laboratory approved by Natural Resource Wales. Population size class assessment survey of P1 and P2 were undertaken in 2025.	Appendix 11-E: Great Crested Newt Technical Appendix (EN010166/APP/6.4)
Reptile Surveys	November 2023 May 2022	The Main Development Area and C&IEA	Survey involved the assessment of potential of habitats within the survey area to support reptiles (typically adder <i>Vipera berus</i> , grass snake	Appendix 11-C: Botanical Technical Appendix (EN010166/APP/6.4)

Study/Survey	Study / Survey date	Study / Survey Area	Description	Report Reference
			<p><i>Natrix Helvetica</i>, common lizard <i>Zootoca vivipara</i> and slow worm <i>Anguis fragilis</i> smooth snake <i>Coronella austriaca</i> and sand lizard <i>Lacerta agilis</i>, following Froglife (1999) (Ref 11) and JNCC (2003) guidance (Ref 12).</p> <p>Reptile surveys were carried out in 2022 by Aspect Ecology in accordance with standard methodology (Ref 11).</p>	
<p>Bats – Preliminary Roost Assessment (PRA)</p>	<p>February 2024</p>	<p>PRA of buildings and trees within the Construction and Operation Area and up to 50 m.</p>	<p>Some buildings within the Main Development Area comprising the Gas Treatment Plant and Contractor Facilities are proposed to be demolished, and were assessed for suitability to support roosting bats. Additionally, buildings to be retained were assessed for their potential for roosting bats which may be indirectly impacted by the Proposed Development, for example the Above Ground Installation.</p> <p>Trees within the C&IEA and in the Main Development Area along the access road to the power station</p>	<p>Appendix 11-G: Bat Technical Appendix (EN010166/APP/6.4)</p>

Study/Survey	Study / Survey date	Study / Survey Area	Description	Report Reference
			<p>were assessed for suitability to support roosting bats.</p> <p>The methodology followed the Bat Conservation Trust (BCT) Good Practice Guidelines (Ref 13). Further bat tree climbing, roost presence / absence surveys and hibernation to be confirmed following completion of the PRA (where applicable).</p>	
Bats – Foraging and Commuting	May to October 2024	Repurposed CO ₂ Connection Corridor and the Proposed CO ₂ Connection Corridor.	<p>A night-time walkover carried out based upon BCT Good Practice Guidelines. This comprises one survey visit per season (spring – April/May; summer – June/July/August; autumn – September/October). Additionally, automated / static bat detector surveys are being carried out, with data collected for a minimum of five consecutive nights per month (April to October) in appropriate (or the best available) weather conditions for bats. Detector locations aim to provide a representative sample of key habitats in the Survey Area that could be impacted by construction or operation activities.</p>	Appendix 11-G: Bat Technical Appendix (EN010166/APP/6.4)

Study/Survey	Study / Survey date	Study / Survey Area	Description	Report Reference
Badger	February to September 2024	The Construction and Operation Area plus up to 30 m (where accessible).	<p>Habitats found within the Construction and Operation Area were identified as suitable for foraging and sett building specifically the woodland, scrub, grassland and tall ruderal habitat.</p> <p>A badger survey is being carried out to determine the presence of any active or partially used or disused setts.</p> <p>Survey methodology will follow best practice guidelines (Harris et al. 1989 (Ref 14); and Badger Trust, 2023 (Ref 15)).</p>	Appendix 11-H: Badger Technical Appendix (Confidential) (EN010166/APP/6.4)
Otter	June to September 2024	The Site, focused on the River Dee and adjacent habitat within the Site, extending up to 200 m up and downstream (where applicable).	<p>The otter survey will assess the likely presence / absence of otter.</p> <p>The otter survey will be completed in accordance with best practice guidance (Chanin, 2023 (Ref 16), Ward 1994 (Ref 17), and Lenton et al, 1980 (Ref 18)).</p>	Appendix 11-J: Otter Technical Appendix (Confidential) (EN010166/APP/6.4)
Water Vole	Mid-April to end of June 2024 (survey one) July to end of September 2024	The Site, focused on the waterbodies within the Construction and Operation Area and adjacent areas	Water vole survey of the Construction and Operation Area and adjacent areas, with potential suitable habitat to support water vole i.e. three ponds adjacent to the Main Development Area and stream near	Appendix 11-I: Water Vole Technical Appendix (Confidential) (EN010166/APP/6.4)

Study/Survey	Study / Survey date	Study / Survey Area	Description	Report Reference
	(survey two)		<p>the Repurposed CO₂ Connection Corridor and the Proposed CO₂ Connection Corridor.</p> <p>The water vole survey will be completed in accordance with best practice guidance (Dean et al, 2016 (Ref 19)).</p>	
Terrestrial invertebrates	April to September 2024	The Main Development Area and C&IEA	<p>Terrestrial invertebrate survey scoping walkover by an entomologist has been completed. Targeted further surveys on habitats suitable for terrestrial invertebrates in the Main Development Area and C&IEA, including probable open mosaic habitat, are ongoing.</p>	<p>Appendix 11-K: Terrestrial Invertebrates Technical Appendix (EN010166/APP/6.4)</p>
Aquatic Surveys	<p>Walkover, macroinvertebrate, fish eDNA, PSYM and macrophyte surveys (July – September 2024)</p>	Focused on the River Dee and waterbodies within the Proposed Development	<p>Aquatic walkover surveys within the Construction and Operation Area and macroinvertebrate, macrophyte and fish eDNA surveys of water bodies above Mean High Water Springs will be required to identify aquatic plants and macroinvertebrates and Priority Ponds, or notable estuarine habitats if present. Aquatic plant Invasive Non-Native Species (INNS) will also be assessed.</p>	<p>Appendix 11-L: Aquatic Ecology Technical Appendix (EN010166/APP/6.4)</p> <p>Surveys yet to be completed / reported</p>

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