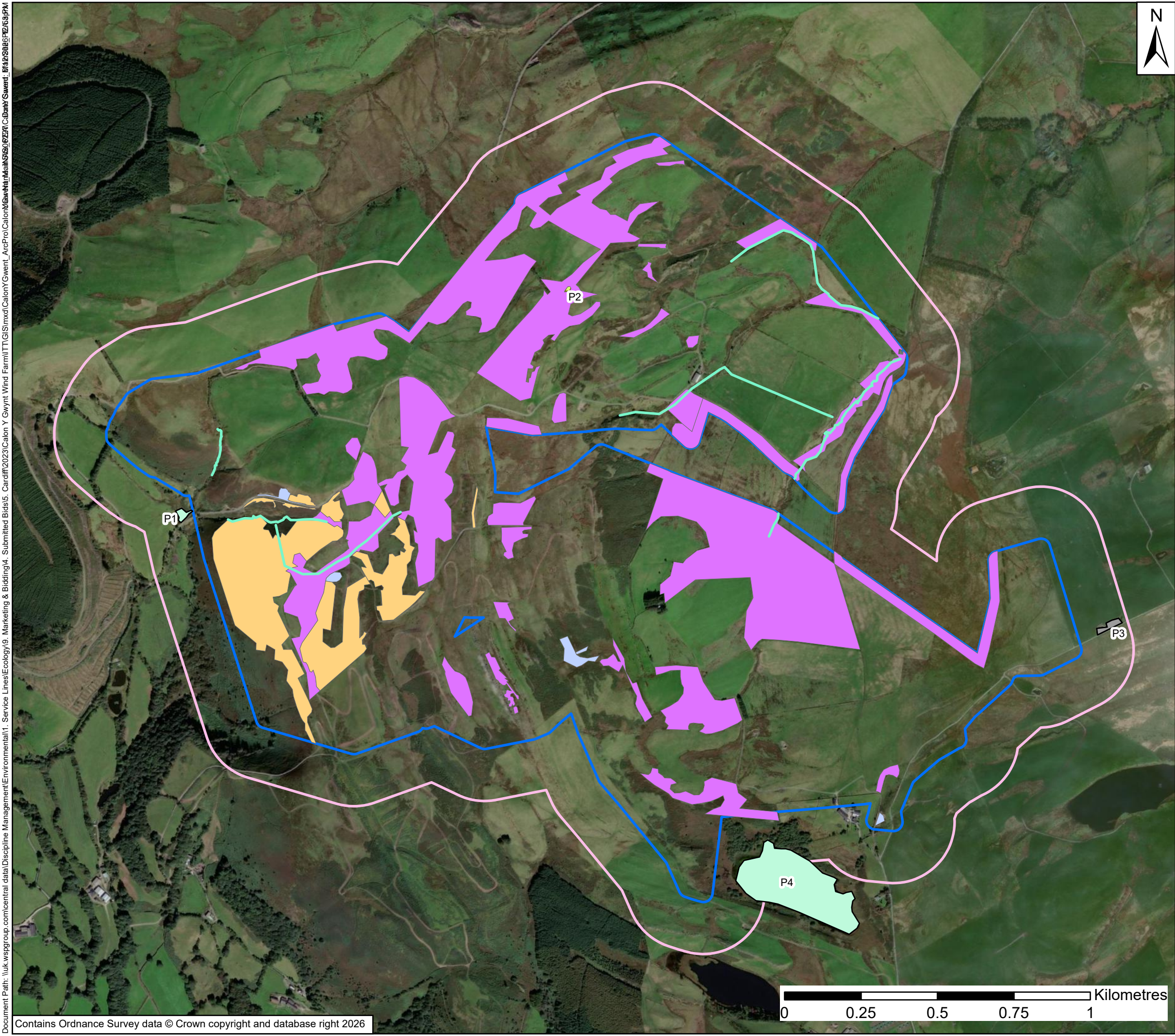
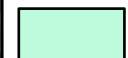


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Legend

-  Survey Area
-  200 m buffer
- Priority Habitats within the Survey Area**
 -  Inland rock outcrops and scree habitats
 -  Ponds
 -  Purple moor-grass and rush pastures
 -  Upland heathland
 -  Rivers
- Ponds within 200 m**
 -  Ponds
 -  Not accessible

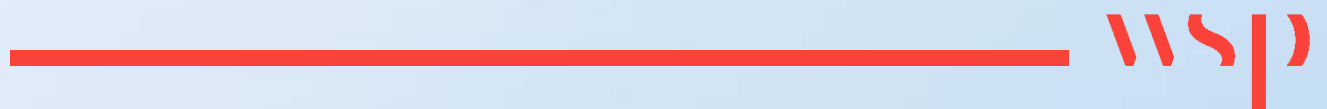


Client:	WIND2		
Project:	CALON Y GWYNT - MAIN SITE PRELIMINARY ECOLOGICAL APPRAISAL		
Title	HABITATS OF CONSERVATION IMPORTANCE		
Drawing No:	Figure 5A.10	Drawn:	AM
Date:	6/12/2026	Checked:	MB
Scale:	1:12,000 @ A3	Approved:	MC



Annex 5A.1

PARC YNNI CALON Y GWYNT MAIN SITE PRELIMINARY ECOLOGICAL APPRAISAL 2024





Parc Ynni Calon y Gwynt

ENVIRONMENTAL STATEMENT

Annex 5A.1: Main Site Preliminary Ecological
Appraisal 2024





Parc Ynni Calon y Gwynt

ENVIRONMENTAL STATEMENT

Annex 5A.1: Main Site Preliminary Ecological Appraisal 2024

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EXECUTIVE SUMMARY

Wind2 is proposing the construction and operation of Parc Ynni Calon Y Gwynt (the 'Proposed Development'). This will comprise 11 turbines, a temporary construction compound, on-site substation, control building, battery storage area and upgrades to existing and new access tracks.

Wind2 commissioned WSP UK Limited (WSP) to undertake a Preliminary Ecological Appraisal (PEA) of the prospective Parc Ynni Calon Y Gwynt (the 'Site'). The aim was to identify habitat types and assess their potential to support protected and/or notable species. The following ecological constraints that could be impacted by the Proposed Development were identified during a desk study (of the Proposed Development and access road (the 'Combined Site')) and a habitat survey:

- Llyn Mawr Site of Special Scientific Interest (SSSI), within the Site.
- Four non-statutory designated sites within 2 km of the Site.
- Thirteen Phase 1 habitat types within the Site, of which five qualify or may qualify as Priority Habitats (G2 - Running water (Rivers); D1.1 - Acidic dry dwarf shrub heath (Upland heathland); B5 - Marsh/marshy grassland (Purple moor-grass and rush pastures); G1 - Standing water (Ponds); and I1.1 - Inland cliff (Inland rock outcrops and scree habitats).
- B-Lines, a non-statutory designated site, within the Site.
- The potential of the Site to support bats, otter *Lutra lutra*, water vole *Arvicola amphibius*, brown hare *Lepus europaeus*, birds, amphibians including great crested newt *Triturus cristatus*, reptiles, and invasive non-native plants (INNS).

For the Proposed Development to comply with relevant legislation and planning policy, following the PEA, the following further surveys, assessments, avoidance and mitigation measures were proposed:

- A Habitat Regulations Assessment (HRA) Stage 1: Screening assessment for statutory designated sites of international importance identified as being within the relevant search areas.
- Avoidance of any impacts to Llyn Mawr SSSI. If this is not possible, SSSI assent would be required from the local authority with regards to the designated site.
- Avoidance of Priority Habitats and B-Lines within the Site. If this is not possible, consultation with Powys County Council should be undertaken. For any loss of Priority Habitat, replacement habitat commensurate or greater than that lost should be provided.
- Completion of a National Vegetation Classification (NVC) Survey and a Groundwater Dependent Terrestrial Ecosystem (GWDTE) assessment.
- Targeted surveys for badger, otter, water vole, great crested newt, and reptiles.
- Implementation of preliminary avoidance and/or mitigation measures for brown hare, birds, amphibians and reptile species, and INNS, to include ecological supervision and completion of the Proposed Development under a Precautionary Method of Works (PMoW).
- Implementation of enhancement measures, to include: installation of bird and bat boxes in trees; planting of pollinator-friendly native species of local provenance; and incorporation of



Sustainable Drainage (SuDS). This helps deliver biodiversity enhancement in accordance Section 6 of the Environment (Wales) Act 2016.

All proposed turbine locations are at least 200 m from buildings identified as suitable to support roosting bats. Thus, no further surveys in relation to roosting bats are recommended. Bat activity surveys were carried out by WSP in 2023, and the findings of these surveys are reported separately.

Targeted bird surveys are being designed and carried out by ecological consultants outside of WSP. Therefore, further surveys are not recommended here.

It was recommended that the above recommendations should be re-visited following the issue of a preliminary design. As such, an update PEA has been carried out in 2026, to which this report is appended. The figures relating to the update PEA report have been updated accordingly.

1. INTRODUCTION

1.1. BACKGROUND

- 1.1.1. WSP UK Limited (hereafter referred to as 'WSP')¹ was commissioned by Wind2 to undertake a Preliminary Ecological Appraisal (PEA) of the Parc Ynni Calon Y Gwynt Site, Powys, mid-Wales (approximate central grid reference: SO 001 983, the 'Site'). The Site is located on the hills to the north of the A470 trunk road, approximately 3.5 km east of the village of Carno, 3.5 km north of the village of Pontdolgoch and 12 km north-west of Newtown. The extent of the Site is shown in **Figure 5A.1**.
- 1.1.2. A PEA of the Site is required to support the prospective Parc Ynni Calon y Gwynt (hereafter referred to as the 'Proposed Development'). The Proposed Development is understood to comprise 11 turbines, a temporary construction compound, on-site substation, control building, battery storage area and upgrades to existing and new access tracks.
- 1.1.3. An access road is proposed to extend 2 km south from the Site. A separate PEA has been carried out for the access road and results are displayed in a separate report (**Appendix 5B** of the Environmental Statement (ES)). In this report, when discussed together, the Site and the access road are referred to as the 'Combined Site' (shown in **Figures 5A.2 to 5A.7**).
- 1.1.4. The Site comprises a range of habitats, including grasslands, bracken *Pteridium aquilinum* and scrub, and coniferous woodland. There are several small streams running throughout the Site, including the Nant y Llyn Mawr, a stream that flows northwards through the Site from Llyn Mawr, a reservoir immediately south of the Site. The Site overlies a bedrock of sandstone and mudstone (Penstrowed Grits Formation), with rocky outcrops in several places, and superficial deposits of peat and till².
- 1.1.5. It is our understanding that further ornithological surveys of the Main Site have been commissioned to BSG Ecology and therefore any further ornithological recommendations beyond those outlined in this report are provided separately (see **Chapter 6: Ornithology** and the associated appendices).
- 1.1.6. Ecological survey data is typically valid for two years³, and as such an update PEA has been carried out in 2026, and forms **Appendix 5A** of the Environmental Statement to which this report is appended. The figures relating to **Appendix 5A** have been updated accordingly to reflect the 2026 PEA.

¹ WSP have provided this report solely for the use of the recipient and accepts no liability to any third parties or any other party using or reviewing the report or any part thereof. WSP makes no warranties or guarantees, actual or implied, in relation to this report, or the ultimate commercial, technical, economic, or financial effect on the project to which it relates, and bears no responsibility or liability related to its use other than as set out within the scope of the contract under which it was supplied.

² British Geological Survey (2024). BGS Geology Viewer (Beta). Available online: <https://www.bgs.ac.uk/map-viewers/bgs-geology-viewer/> [accessed January 2024]

³ CIEEM (2019). Advice Note on the Lifespan of Ecological Reports & Surveys. [Available online: <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>].

1.2. SCOPE OF REPORT

1.2.1. Wind2 commissioned WSP in June 2023 to complete a PEA of the Site. The brief was:

- To provide baseline ecological information about the Site and a surrounding study area with particular reference to whether legally protected and/or notable sites, species or habitats are present or likely to be present;
- To provide recommendations to enable compliance with relevant nature conservation legislation and planning policy; and
- If necessary, to identify the need for avoidance, mitigation, compensation or enhancement measures and/or further ecological surveys.

1.3. RELEVANT LEGISLATION AND POLICY

1.3.1. The appraisal has been compiled with reference to the following relevant nature conservation legislation, planning policy and the UK Biodiversity Framework from which the protection of sites, habitats and species is derived in Wales. The context and applicability of each item is explained as appropriate in the relevant sections of the report and additional details are presented in Annex 1.

Legislation

- The Conservation of Habitats and Species 2017 (as amended) (Habitats Regulations)⁴;
- The Wildlife and Countryside Act 1981 (as amended) (WCA)⁵;
- The Town and Countryside (Environmental Impact Assessment) (Wales) Regulations 2017⁶;
- The Protection of Badgers Act 1992⁷;
- The Wild Mammals (Protection) Act 1996⁸;
- The Hedgerow Regulations 1997⁹;
- Environment (Wales) Act 2016¹⁰;
- The Wellbeing of Future Generations (Wales) Act 2015¹¹.

⁴ HMSO (2019). The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations).

⁵ HMSO (1981). Wildlife and Countryside Act (as amended by the Countryside and Rights of Way Act 2000). HMSO, Norwich.

⁶ HMSO (2017). the Town and Countryside (Environmental Impact Assessment) (Wales) Regulations.

⁷ HMSO (1992). The Protection of Badgers Act.

⁸ HMSO (1996). The Wild Mammals (Protection) Act. HMSO, London.

⁹ HMSO (1997). The Hedgerows Regulations, SI 1997/1160. HMSO, London.

¹⁰ National Assembly for Wales (2016). Environment (Wales) Act 2016.

¹¹ National Assembly for Wales. 2015. Well-being of Future Generations (Wales) Act 2015.

Policy

- The UK Post-2010 Biodiversity Framework (2011-2020)¹²;
- UK Biodiversity Action Plan (UKBAP)¹³;
- Planning Policy Wales (PPW) (Edition 12) 2024¹⁴;
- Future Wales: The National Plan 2040¹⁵; and
- Powys Local Biodiversity Action Plan (LBAP), which is incorporated within Powys Nature Recovery Action Plan¹⁶.

¹² JNCC and DEFRA (2012) UK Post 2010 Biodiversity Framework. Available online: <http://jncc.defra.gov.uk/page-6189>. [Accessed July 2014].

¹³ The UK BAP has now been replaced by the UK Post-2010 Biodiversity Framework, however, it contains useful information on how to characterise important species assemblages and habitats which is still relevant.

¹⁴ Welsh Government (2024). Planning Policy Wales Edition 12.

¹⁵ Welsh Government (2021) Future Wales: The National Plan 2040, February 2021. [online]. Available at: <https://gov.wales/future-wales-national-plan-2040>. [Accessed 16 March 2026].

¹⁶ Powys Nature Partnership 2022-2023. Powys Nature Recovery Action Plan. [online]. Available at: <https://en.powys.gov.uk/article/2573/Powys-Nature-Recovery-Action-Plan>. [Accessed 17 March 2026].

2. METHODS

2.1. OVERVIEW

- 2.1.1. This appraisal has been prepared with reference to current good practice guidance published by the Chartered Institute for Ecology and Environmental Management^{17,18,19}, and Joint Nature Conservation Committee²⁰; and guidance contained in the British Standard – Code of Practice for Biodiversity and Development BS42020:2013²¹.
- 2.1.2. This PEA is based on the following data sources:
- An ecological desk study;
 - An extended habitat survey;
 - A Daytime Bat Walkover (DBW);
 - A Habitat Suitability Index (HSI) assessment; and
 - A protected/notable species assessment.
- 2.1.3. Although Phase 1 habitat data is discussed in this report, the original habitat data was collected as UK Habitat Classification (UKHab) data, whereby habitats were described and mapped following the standard UKHab survey methodology²². Following the survey, the UKHab data was converted into Phase 1 habitat data as the standard habitat classifying system in Wales. The original UKHab data is presented in a habitat map in **Annex 7**. Throughout the following report, results are described following Phase 1 habitat survey guidelines²⁰.

2.2. DESK STUDY

- 2.2.1. The desk study was undertaken in February 2024 to review the existing ecological baseline information available in the public domain and to obtain information held by relevant third parties. For the purpose of the desk study exercise, records were collated within various radii from around the Site unless otherwise stated (the Figures do however include the access road). This approach is consistent with current good practice guidance published by the CIEEM^{17,18}. To provide the baseline data for the ecological desk study, the following information was requested from Biodiversity Information Service for Powys & Brecon Beacons National Park (BIS):
- Records of non-statutory nature conservation sites within 2 km;
 - Records of Ancient Woodland Inventory (AWI) parcels within 2 km;
 - Records of legally protected and/or notable species within 1 km; and

¹⁷ Chartered Institute of Ecology and Environmental Management (CIEEM) (2017). Guidelines for Preliminary Ecological Appraisal. CIEEM, Winchester.

¹⁸ CIEEM (2017). Guidelines for Ecological Report Writing. CIEEM, Winchester.

¹⁹ CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland, Terrestrial, Freshwater and Coastal. CIEEM, Winchester.

²⁰ JNCC (2016). Handbook for Phase 1 habitat survey – a technique for environmental audit. JNCC, Peterborough.

²¹ British Standards Institute (2013) Biodiversity code of practice for planning and development: BS42020. BSI. London.

²² Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020) The UK Habitat Classification User Manual Version 1.1 at <https://ukhab.org/>.

- Bats records within 10 km.

- 2.2.2. Records of statutory nature conservation sites within 2 km (extended to 10 km for statutory designated sites of international importance, to 20 km for sites designated for birds, and 30 km for sites designated for bats) of the Site were identified using DataMapWales²³.
- 2.2.3. DataMapWales was also used to identify any Priority Habitats that may be present within the Site.
- 2.2.4. Open source 1:25,000 Ordnance Survey (OS) mapping was used to identify any mapped waterbodies and watercourses within 500 m of the Site.
- 2.2.5. The findings of the desk study have been incorporated within Section 3 of this report and are shown on **Figures 2 to 7**.
- 2.2.6. The ecological desk study was carried out by a member of CIEEM, who has completed numerous ecological desk studies within the last year.

2.3. HABITAT SURVEY

- 2.3.1. A habitat survey of the Site was undertaken between 19th June and 23rd June 2023, to classify and map the habitats present and identify their suitability for supporting protected and notable species.
- 2.3.2. The survey covered the entire Site including boundary features. In addition, an approximate area of 30 m around the Site was also surveyed where safe and accessible to do so. As the area surveyed extended beyond the Site it is hereafter known as the 'Survey Area,' shown on **Figure 5A.1**. The habitat survey was carried out by competent ecologists with CIEEM memberships, and who have experience undertaking habitat surveys of similar habitats. One of the ecologists was also Field Identification Skills Certificate (FISC) accredited to Level 4.
- 2.3.3. Following the surveys, habitats were described and mapped following the standard Phase 1 habitat survey methodology²⁰. Phase 1 habitat survey is a standard technique for classifying and mapping British habitats. The dominant plant species are recorded, and habitats are classified according to their vegetation types. Where appropriate, consideration was given to whether habitats qualify, or could qualify, as Priority Habitats following habitat descriptions published by the Joint Nature Conservation Committee²⁴.
- 2.3.4. A list of plant species was compiled (**Annex 3**), with relative plant species abundance estimated using the DAFOR scale²⁵. The scientific names for plant species follow those in the New Flora of the British Isles²⁶ (Stace, 2019) and are also listed in **Annex 3**.
- 2.3.5. Habitats were marked on a mobile mapping computer and were subsequently digitised using a Geographical Information System (GIS). These are shown on **Figure 5A.8**.

²³ <https://datamap.gov.wales/> [Accessed January 2024]

²⁴ JNCC Biodiversity Reporting and Information Group (2008). UK Biodiversity Action Plan

²⁵ The DAFOR scale has been used to estimate the frequency and cover of the different plant species as follows: Dominant (D) - >75% cover, Abundant (A) – 51-75% cover, Frequent (F) – 26-50% cover, Occasional (O) – 11-25% cover, Rare (R) – 1-10% cover., The term 'Locally' (L) is also used where the frequency and distribution of a species are patchy and 'Edge' (E) is also used where a species only occurs on the edge of a habitat type.

²⁶ Stace, C. (2010). *New flora of the British Isles*. Cambridge university press.

- 2.3.6. Target notes (TNs) were made to provide information on specific features of ecological interest or habitat features too small to be mapped. These are included in **Annex 4** and shown on **Figure 5A.9**. Photos are included in **Annex 5**.
- 2.3.7. Any invasive non-native plant species (INNS) listed on Schedule 9 of the WCA which were evident during the extended habitat survey were also target noted. Detailed mapping of such species; or a full survey of the Survey Area for all INNS, is beyond the scope of this commission.

2.4. DAYTIME BAT WALKOVER

- 2.4.1. A DBW of trees, buildings and structures was undertaken within the Survey Area. The DBW was intended to identify the presence of trees, buildings and structures that could support bat roosts, with the aim to inform any further bat survey requirements. All observations were made from ground level.
- 2.4.2. Following the surveys, buildings and structures were classified as having one of the following suitability to support roosting bats (as per Collins (2023)³³); none, negligible, low, moderate or high suitability. These are described below in **Table 2-1**.

Table 2-1 – Bat Roosting Suitability Categorisation for Buildings and Structures (as per Collins (2023)³³)

Category	Description
None	No habitat features on Site likely to be used by any roosting bats at any time of the year (i.e., a complete absence of crevice/suitable shelter at all ground/underground levels).
Negligible	No obvious habitat features on Site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one of more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e., unlikely to be suitable for maternity and not a classic cool/stable hibernation site but could be used by individual hibernating bats).
Moderate	A structure with one of more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat by unlikely to support a roost of high conservation status.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g., maternity, or classic cool/stable hibernation sites.

- 2.4.3. Trees were categorised as having one of the following suitability to support roosting bats (as per Collins (2023)³³); none, Further Assessment Required (FAR) and Potential Roost Feature (PRF). These are described below in Table 2-2.

Table 2-2 – Bat Roosting Suitability Categorisation for Trees (as per Collins (2023)³³)

Category	Description
None	Either no PRFs in the tree or highly unlikely to be any.
Further Assessment Required (FAR)	Further assessment required to establish if PRFs are present in the tree.
Potential Roost Feature (PRF)	A tree with at least one PRF present.

- 2.4.4. Trees, buildings and structures were considered as requiring further surveys if they were assessed as having suitability to support roosting bats.

2.5. HABITAT SUITABILITY INDEX ASSESSMENT

- 2.5.1. A review of OS and aerial imagery of the Site indicated the presence of waterbodies within 500 m of the Site boundary.
- 2.5.2. A Habitat Suitability Index (HSI) assessment of these waterbodies was undertaken in accordance with the standard approach developed by Oldham et al. ²⁷, and refined by Amphibian and Reptile Groups UK.
- 2.5.3. The objective of the HSI assessment was to identify the broad suitability of waterbodies to support great crested newt *Triturus cristatus* populations, and to use the HSI scores to scope out locations from further great crested newt surveys where the results of the HSI assessment indicated a likely absence of breeding great crested newt.
- 2.5.4. All accessible waterbodies identified (using OS basemaps and aerial maps) within a 250 m search area of the Site were subjected to a HSI assessment that assessed their suitability to support great crested newt and informed the need for further surveys. The results of the HSI assessment are presented in Appendix 5A.6 and discussed in this report.

2.6. PROTECTED SPECIES ASSESSMENT

- 2.6.1. The potential for the Site to support legally protected and/or notable species was assessed using the field observations made during the extended habitat survey. The assessment of habitat suitability for protected and notable species was based on professional experience and judgement. This was supplemented by standard sources of guidance on habitat suitability assessment for key faunal

²⁷ Oldham R.S., Keeble J., Swan M.J.S., and Jeffcote M. (2000) Evaluating the suitability of habitat for the great crested newt. Herpetological Journal 10: 143-155

groups including: birds^{28,29}, great crested newt^{30,31}; reptiles^{30,32}; bats^{33,34}; badger *Meles meles*^{35,36}; brown hare *Lepus europeus*³⁷; otter *Lutra lutra*³⁸; water vole *Arvicola amphibius*³⁹ and invertebrates^{40, 41}.

2.7. NOTES AND LIMITATIONS

2.7.1. Every effort has been made to provide a comprehensive description of the Survey Area; however, the following specific limitations apply to this assessment:

- Ecological survey data is typically valid for two years unless otherwise specified^{42,3}; for example, if conditions are likely to change more quickly due to ecological processes or anticipated changes in management.
- Records held by local biological record centres and local recording groups are generally collected on a voluntary basis; therefore, the absence of records does not demonstrate the absence of species, it may simply indicate a gap in recording coverage.
- The ecological desk study was carried out from a central grid reference from the Combined Site. This was done because these were connected sites and desk study records within the search area are relevant to both sites.

²⁸ Gilbert, G., Gibbons, D.W. and Evans, J. (1998). Bird Monitoring Methods: A Manual of Techniques for Key UK Species. RSPB

²⁹ Bibby C.J, Burgess N.D, Hill D.A, Mustoe S.H. (2000) Bird Census Techniques. Second Edition. Elsevier Ltd.

³⁰ Gent, A. and Gibson, S. (2003). Herpetofauna Workers Manual. JNCC. Peterborough

³¹ English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature, Peterborough.

³² Froglife (1999). Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice sheet 10. Froglife, Halesworth

³³ Collins J. (ed.) (2023) Bat Surveys for Professional Ecologists, Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London.

³⁴ Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature.

³⁵ Harris S, Cresswell P and Jefferies D (1991). (Report) Surveying Badgers. The Mammal. Society, Bristol.

³⁶ Roper, T.J. (2010). Badger. Harper Collins.

³⁷ Wheeler, P., Wray, S. and Yalden, D. (2012). Brown Hare and Mountain Hare. In: Cresswell, W.J., Birks, J.D.S., Dean, M., Pacheco, M., Trehwella, W.J., Wells, D. and Wray, S. (eds.) UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation. Southampton: The Mammal Society.

³⁸ Chanin P (2003). Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough

³⁹ Dean, M., Strachan, R., Gow, D. and Andrews R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds. Fiona Matthews and Paul Chanin. The Mammal Society, London.

⁴⁰ Drake C.M., Lott D.A., Alexander K.N.A. and Webb J. (2007). Surveying terrestrial and freshwater invertebrates for conservation evaluation. Natural England Research Report NERR005. Natural England, Peterborough.

⁴¹ Kirby, P. (2001). Habitat Management for Invertebrates: A Practical Handbook. RSPB Management Guides.

⁴² Chartered Institute of Ecology and Environmental Management (CIEEM) (2017). Guidelines for Preliminary Ecological Appraisal. CIEEM, Winchester.

- Botanical surveys are seasonally limited, and throughout the spring and summer period certain species will be more or less evident at different times (i.e. depending on the flowering season). The extended habitat survey was conducted within the optimal timeframe for habitat surveys. It is considered that sufficient information was gathered to enable an assessment of the habitat types present, in line with standard Phase 1 habitat categories and the potential for these to support protected or notable species.
- The extended habitat survey was carried out over the period of only five days, over a large area; as such only a selection of all species that occur within the Survey Area will have been recorded. The desk study data discussed within this report will supplement this survey data.
- The extended Phase 1 habitat map (**Figure 5A.8**) has been reproduced from field notes and plans. Whilst this provides a sufficient level of detail to fulfil the requirements of a PEA, the maps are not intended to provide exact locations of key habitats.

3. RESULTS

3.1. DESK STUDY

STATUTORY DESIGNATED SITES

- 3.1.1. One designated site of international importance is located within 10 km of the Site: Coedydd Llawr-y-glyn SAC.
- 3.1.2. The desk study identified one statutory site designated for nature conservation of national importance within 2 km of the Site. This was Llyn Mawr Site of Special Scientific Interest (SSSI) which was located partially within the southern extent of the Site.
- 3.1.3. Further details of Coedydd Llawr-y-Glyn SAC and Llyn Mawr SSSI are provided in **Table 3-1** and locations are shown on **Figure 5A.3**.

Table 3-1 – Statutory designated sites within 2 km of the Site

Site Name	Designation	Size (ha)	Approximate Distance and Orientation from the Site	Description
Coedydd Llawr-y-Glyn	SAC	99	7.6 km southwest	Designated for the presence of old sessile oak <i>Quercus petraea</i> woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles.
Llyn Mawr	SSSI	20	Within the Site	An upland lake only partially modified by agricultural improvement with marginal vegetation consisting of mainly rushes and sedges, with yellow water-lily <i>Nuphar lutea</i> occurring in discrete zones. The lake has ornithological importance for waterfowl including water species such as whooper swan <i>Cygnus cygnus</i> and Greenland white-fronted geese <i>Anser albifrons</i>. The lake also hosts eleven species of caddisfly and four species of dragonfly. Botanically species-rich habitats surround the lake catchment.

- 3.1.4. The search was extended to 20 km for statutory sites designated for birds and 30 km for statutory sites designated for bats. Two Special Protection Area (SPA) for birds was identified within 20 km of the Site and is listed in **Table 3-2** and shown on **Figure 5A.3**. A total of 15 of statutory sites designated for bats were identified; these are listed in **Table 3-3** and shown on **Figure 5A.3 and 5A.4**.

Table 3-2 – Statutory designated sites within 20 km of the Site which are designated for birds

Site Name	Designation	Size (ha)	Approximate Distance and Orientation from the Site	Description
Berwyn	SPA	24,272	15 km north-west	Berwyn SPA is a site dominated by bogs, marshes and fens with heath, scrub and grassland habitats. It is a known breeding site for hen harrier <i>Circus cyaneus</i> , merlin <i>Falco columbarius</i> , peregrine falcon <i>Falco peregrinus</i> and red kite <i>Milvus milvus</i> .
Elenydd – Mallaen	SPA		19km south	Elenydd-Mallaen SPA is one of the most important upland bird areas in Wales, particularly notable for its breeding populations of red kite <i>Milvus milvus</i> and merlin <i>Falco columbarius</i> . It also supports important numbers of peregrine <i>Falco peregrinus</i> , chough <i>Pyrrhocorax pyrrhocorax</i> , golden plover <i>Pluvialis apricaria</i> and raven <i>Corvus corax</i> , with the latter occurring at one of the highest breeding densities recorded in Europe.

Table 3-3 – Statutory designated sites within 30 km of the Site which are designated for bats

Site Name	Designation	Size (ha)	Approximate Distance and Orientation from the Site	Description
Gregynog	SSSI	55	6 km east	This site supports foraging lesser horseshoe bats <i>Rhinolophus hipposideros</i> .
River Ithon	SSSI	177	18 km south-east	River Ithon is a tributary of the River Wye. The river and bankside trees support large populations of flying insects, which provide an important food source for bats, including Daubenton's bat <i>Myotis daubentonii</i> .
Glascoed, Meifod	SSSI	1	18 km north-east	The site is of species interest because it supports a major maternity roost of the lesser horseshoe bat. This site is of national importance for lesser horseshoe bats and forms part of a wider group of sites in this part of Wales that are considered to be internationally important for the conservation of the species.
River Wye/Afon Gwy (Wales)	Special Area of	1274	20 km south-west	The River Wye is an inland waterbody designated as a watercourse of plan to

Site Name	Designation	Size (ha)	Approximate Distance and Orientation from the Site	Description
	Conservation (SAC)			montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation. Annex II species which are primary reasons for selection of the site include lesser horseshoe and greater horseshoe bats <i>Rhinolophus ferrumequinum</i> .
Tanat and Vyrnwy Bat Sites/Safleoedd Ystlumod Tanat ac Efyrrwy	SAC	12	23 km north-east	Lesser horseshoe bats are Annex II species that are a primary reason for selection of this. This area in central Wales and contains a good mixture of lesser horse bat maternity and hibernation sites. It is thought to support 4% of the UK species population, though counts in hibernation sites suggests this may be underestimated.
Allt Y Main Mine	SSSI	1	23 km north-east	Forms part of Tanat and Vyrnwy Bat Sites/Safleoedd Ystlumod Tanat ac Efyrrwy SAC.
Leighton Bat Roosts	SSSI	0.5	24 km east	This site is of special interest as the largest known nursery roost and one of the largest known hibernation site for the lesser horseshoe bat in the Montgomeryshire Area. This site is of national importance for lesser horseshoe bats and forms part of a wider group of internationally important sites for the species.
Bryngwyn Hall Stables and Coach House	SSSI	0.1	25 km north-east	Forms part of Tanat and Vyrnwy Bat Sites/Safleoedd Ystlumod Tanat ac Efyrrwy SAC.
Penygarnedd Mine	SSSI	2	26 km north-east	Forms part of Tanat and Vyrnwy Bat Sites/Safleoedd Ystlumod Tanat ac Efyrrwy SAC.
West Llangynog Slate Mine	SSSI	6	27 km north	Forms part of Tanat and Vyrnwy Bat Sites/Safleoedd Ystlumod Tanat ac Efyrrwy SAC.
Garth-Eryr	SSSI	0.5	29 km north-east	Forms part of Tanat and Vyrnwy Bat Sites/Safleoedd Ystlumod Tanat ac Efyrrwy SAC.
Coedydd Derw a Safleoedd Ystlumod Meirion/Meirionnydd	SAC	2813	29 km north-west	Lesser horseshoe bats are Annex II species that are a primary reason for selection of this site. This large composite site includes most

Site Name	Designation	Size (ha)	Approximate Distance and Orientation from the Site	Description
Oakwoods and Bat Sites				of the know maternity roosts in Meirionnydd and some hibernation roosts. It is considered the centre of distribution for lesser horseshoe bats in Wales. The sheltered river valleys provide excellent tree cover and numerous suitable maternity roosts. Annex I habitats that are a primary reason for selection of this site include old sessile oak <i>Quercus petraea</i> woods with holly <i>Ilex</i> and ferns <i>Blechnum</i> in the British Isles and Alluvial forests with alder <i>Alnus glutinosa</i> and ash <i>Fraxinus excelsior</i> (<i>Alno-Padino</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>). Further Annex I habitats present include water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation, Northern Atlantic wet heaths with cross-leaved heath <i>Erica tetralix</i>, European dry heaths, <i>Tilio-Acerion</i> forests of slopes, screes and ravines and bog woodland.
Coed Dyffryn Wnion	SSSI	189	29 km north-west	Forms part of Coedydd Derw a Safleoedd Ystumod Meirion/Meirionnydd Oakwoods and Bat Sites SAC.
Mwyngloddiau Wnion A Eglwys Sant Marc	SSSI	1	30 km north-west	Forms part of Coedydd Derw a Safleoedd Ystumod Meirion/Meirionnydd Oakwoods and Bat Sites SAC.
Hendre, Llangedwyn	SSSI	1	30 km north-east	Forms part of Tanat and Vyrnwy Bat Sites/Safleoedd Ystumod Tanat ac Efyrrwy SAC.

NON-STATUTORY SITES

- 3.1.5. Four non-statutory designated sites were identified within 2 km of the Site. These are shown below in **Table 3-4** and on **Figure 5A.5**.

Table 3-4 – Non-statutory designated sites within 2 km of the Site

Site Name	Designation	Size (ha)	Approximate Distance and Orientation from the Site	Description
Llyn Mawr	Wildlife Trust Reserve	17	Within the Site	See Table 3-1, Llyn Mawr SSSI. This site has recently been closed to the public and made wildlife-only.
B-lines	B-lines ⁴³	150,000	Within the Site	B-lines are locally important insect pollinator dispersal pathways between areas of existing wildflower-rich habitat.
Llyn Du	Wildlife Site/Site of Importance for Nature Conservation (SINC) (Adopted)	4	0.5 km south	Upland lake, 250 m south of Llyn Mawr SSSI.
Grofftydd	Road Verge Nature Reserve	0.3	1.2 km south-west	Designated by Montgomeryshire Wildlife Trust as part of the 'Living Highways Project' with the aim to recognise the ecological value of road verges ⁴⁴ .

⁴³ B-Lines have been mapped by Buglife to address the problem of the loss of flowers and pollinators. The B-Lines are a series of 'insect pathways' running through our countryside and towns, along which Buglife are restoring and creating a series of wildflower-rich habitat stepping-stones. <https://www.buglife.org.uk/our-work/b-lines/b-lines-wales/> (Accessed July 2023).

⁴⁴ Powys County Council (2026). Road Verge Biodiversity. Available at: <https://en.powys.gov.uk/article/12686/Road-Verge-Biodiversity> (Accessed July 2026).

OTHER HABITATS OF CONSERVATION IMPORTANCE

- 3.1.6. The desk study identified 47 AWI parcels within 2 km of the Site. Of these, the closest is an Ancient Semi-Natural Woodland (ASNW) parcel 100 m west of the Site. The AWI parcels are shown on **Figure 5A.6** and detailed in **Table 3-5** below.

Table 3-5 – AWI parcels identified in desk study records

AWI parcels	Number of parcels within 2 km of the Site
Ancient Semi-Natural Woodland	42
Restored Ancient Woodland Site	1
Ancient Woodland Site of Unknown Category	1
Plantation on Ancient Woodland (PAWS)	3
Total	47

- 3.1.7. A search on DataMapWales for Priority Habitats identified two Priority Habitats within the Site. These are provided in **Table 3-6** along with the areas covered by each. These are shown on **Figure 5A.6**.

Table 3-6 – Priority Habitats identified in desk study records within the Combined Site

Priority Habitats	Total area (Ha)	Present within the Site
Purple Moor Grass and Rush Pastures	0.691	Yes
Upland Heathland	12.24	Yes

- 3.1.8. A search for waterbodies identified multiple standing bodies of water within 500 m of the Combined Site (see section 3.4). Within the same search area, several tributaries within the Combined Site and beyond run into three larger watercourses; these are Afon Carno, Nant Cwmgerwyn and Nant y Llyn Mawr, the latter of which is partially within the Site. All of these watercourses have connectivity with the River Severn, confirming that the Combined Site has hydrological connectivity with the Severn Estuary, which is designated as a SAC.
- 3.1.9. All waterbodies within 500 m of the Combined Site are shown on **Figure 5A.7**.

3.2. HABITAT SURVEY

OVERVIEW

- 3.2.1. The following account summarises the findings of the extended habitat survey. In total, 16 Phase 1 habitat types were identified within the Survey Area. They are mapped on **Figure 5A.8** and are listed in **Table 3-6** along with areas in hectares (or length in metres for linear features). A description of the dominant and notable species, the composition and management of each habitat is provided below, and an indicative species list is provided in **Annex 3**. Target notes are provided in **Annex 44** and photos in **Annex 5**, mapped on **Figure 5A.9**. The order of the habitat descriptions below does not reflect habitat importance.

Table 3-7 – Phase 1 habitat areas

Phase 1 habitat	Area (ha)	Length (m)	% of Survey Area
A1.2 – Coniferous woodland	0.65	-	0.17
A2.1 – Dense/continuous scrub	0.13	-	0.03
A3.1 – Broad-leaved parkland/scattered trees	-	19.79	-
A3.2 – Coniferous parkland/scattered trees	-	163.72	-
B1.2 – Semi-improved acid grassland	144.25	-	37.76
B2.2 – Semi-improved neutral grassland	79.10	-	20.71
B4 – Improved grassland	1.85	-	0.48
B5 – Marsh/marshy grassland	78.25	-	20.48
C1 – Bracken	52.71	-	13.80
D1.1 – Acidic dry dwarf shrub heath	18.27	-	4.78
G1 – Standing water	0.02	-	0.01
G2 – Running water	-	3549.90	-
I1.1 – Inland cliff	0.84	1794.20	0.22
J2.5 – Wall	-	1328.84	-
J2.6 – Dry ditch	-	1144.68	-

Phase 1 habitat	Area (ha)	Length (m)	% of Survey Area
J5 – Other habitat	5.91	-	1.55
TOTAL	381.98⁴⁵	8001.14	100

A1.2 – CONIFEROUS WOODLAND

- 3.2.2. Two small parcels of coniferous woodland were recorded in the Site, dominated by Scots pine *Pinus sylvestris* (Photo 21). Other tree species in this habitat were rare ash *Fraxinus excelsior*, hawthorn *Crataegus monogyna* and sycamore *Acer pseudoplatanus*, however these broadleaved species covered less than 10% of the canopy. The trees within these woodlands were densely planted, with a very sparse understorey where present. The ground was covered by leaf litter.
- 3.2.3. As these are plantation woodlands, they do not qualify as Priority Habitats.

A2.1 – DENSE/CONTINUOUS SCRUB

- 3.2.4. Three parcels of dense/continuous scrub were identified in the Site. The first of these, in the north of the Site, was a parcel of scrub comprising willow species *Salix spp.* and hawthorn. The height of the scrub did not exceed 5 m, and was mostly approximately 3 m. It was fenced off from the surrounding fields, preventing sheep grazing.
- 3.2.5. The second parcel, in the north-west of the Site, again was approximately 3 m high. Here, the species composition differed, with Scots pine and hawthorn co-dominant with occasional ash.
- 3.2.6. A line of hawthorns was recorded within the north of the Site (Photo 20). These hawthorns were up to 4 m high, with some gaps in the canopy up to 1 m.
- 3.2.7. These parcels do not qualify as Priority Habitats.

A3.1 – BROAD-LEAVED PARKLAND/SCATTERED TREES

- 3.2.8. A line of semi-mature hawthorn trees up to 3 m tall with gaps of up to 1 m was identified in the northern extent of the Site, along a section of fence line.
- 3.2.9. As this line of trees is less than 20 m long, it does not qualify as a Priority Habitat.

A3.2 – CONIFEROUS PARKLAND/SCATTERED TREES

- 3.2.10. A line of Scots Pine trees 170 m long with gaps of up to 22 m was identified in the eastern extent of the Site.
- 3.2.11. As gaps between trees exceed 20 m, it does not qualify as a Priority Habitat.

B1.2 – SEMI-IMPROVED ACID GRASSLAND

- 3.2.12. Semi-improved acid grassland was found throughout the entire northern extent of the Site (Photo 11).

⁴⁵ Area and length values rounded to 2 decimal places.

- 3.2.13. The grassland was mainly sheep-grazed, although some areas were cow-grazed, with a short sward. Some areas had increased abundance of plants indicative of wet conditions such as rushes, and there was scattered purple moor-grass *Molinia caerulea* (TN15), bilberry *Vaccinium myrtillus* (TN5, Photo 2), gorse *Ulex europaeus* (TN3, 4, 8, Photo 1) and bracken (TN7, 16, 17, 18) within the grassland habitat parcels. One area of upland grassland was fenced off and protected from sheep-grazing (TN1). Here, sward height was taller (up to 40 cm), and structural diversity was increased. Dead plant litter was frequent in this parcel.
- 3.2.14. Frequent species found in the other semi-improved acid grassland habitat in the Site were heath bedstraw *Galium saxatile*, heath rush *Juncus squarrosus*, mat-grass *Nardus stricta*, sheep's fescue *Festuca ovina* agg., sweet vernal-grass *Anthoxanthum odoratum*, tormentil *Potentilla erecta* and Yorkshire-fog *Holcus lanatus*. Heath milkwort *Polygala serpyllifolia* was locally frequent.
- 3.2.15. Some species, including occasional white clover *Trifolium repens*, and rare bugle *Ajuga reptans*, cat's-ear *Hypochaeris radicata*, common bird's-foot-trefoil *Lotus corniculatus*, common chickweed *Stellaria media*, creeping buttercup *Ranunculus repens*, nettle *Urtica dioica* and perennial rye-grass *Lolium perenne*, were more common in areas of intensive disturbance. For example, these species were more common in areas adjacent to bare ground tracks and in intensely grazed fields by sheep and cattle.
- 3.2.16. Where identified within the Site, this habitat type does not qualify as a Priority Habitat; although Lowland Acid Grassland is a recognised Priority Habitat, the Site was above 300 m Above Ordnance Datum (AOD) and therefore does not align with this category.

B2.2 – SEMI-IMPROVED NEUTRAL GRASSLAND

- 3.2.17. The parcels of semi-improved neutral grassland were located predominantly in the eastern and southern extents of the Site (Photos 13, 14). These were sheep-grazed, and with a sward height varying between 3 cm and 30 cm depending on the intensity of the grazing. There were areas with locally frequent rushes, indicating some wetter ground. Towards the south of the Site, these habitat parcels were grazed by cattle and horses.
- 3.2.18. The semi-improved neutral grassland habitat in the Site comprised frequent sheep's sorrel *Rumex acetosella*, tufted hair-grass *Deschampsia caespitosa* and Yorkshire-fog. There was also locally frequent nettle and pineapple weed *Matricaria discoidea*.
- 3.2.19. The semi-improved neutral grassland habitats do not qualify as a Priority Habitat.

B4 – IMPROVED GRASSLAND

- 3.2.20. Two very small parcels of improved grassland were identified in the south of the Site, grazed by cattle (Photo 15).
- 3.2.21. The improved grassland was dominated by perennial rye-grass. The other species found in this habitat were occasional Timothy *Phleum pratense*, and rare creeping thistle *Cirsium arvense*, soft rush *Juncus effusus*, white clover and Yorkshire-fog.
- 3.2.22. The improved grassland habitat parcels do not qualify as a Priority Habitat.

B5 – MARSH/MARSHY GRASSLAND

- 3.2.23. Parcels of marshy grassland were located throughout the Site (Photo 10). These were sheep-grazed throughout the Site, and had a heterogeneous sward height between 3 cm (heavily grazed

graminoids) and 70 cm (in less intensively grazed areas), with some marsh thistle *Cirsium palustre* up to 100 cm. Some habitat parcels hosted scattered and discrete parcels of bracken, which was not large enough to map as a habitat mosaic, whilst other parcels hosted scattered willow species and hawthorn (TN21, Photo 6) or larch *Larix sp.* trees (TN22). The parcels of marshy grassland were varied, with most parcels dominated by purple moor-grass, and some dominated by rush species *Juncus spp.* The purple moor-grass formed dense tussocks, with layers of dead vegetation within the habitat.

- 3.2.24. Overall, the dominant species of the marshy grassland habitat in the Site was purple moor-grass. Frequent species of rushes included sharp-flowered rush *Juncus acutiflorus* and soft rush. Round-leaved sundew *Drosera rotundifolia* was locally frequent.
- 3.2.25. Marshy grassland qualifies as a Priority Habitat in accordance with Section 7 of the Environment (Wales) Act 2016¹⁰, as 'Purple Moor Grass and Rush Pastures.'

C1 – BRACKEN

- 3.2.26. There were parcels of bracken habitat located throughout the entire Site (Photo 12). The parcels of bracken were dense and up to 2 m high, with an understorey mainly comprised by graminoids as for the surrounding grasslands, where visible.
- 3.2.27. Bracken habitat in the Site was dominated by bracken, with rare dwarf gorse *Ulex minor* and foxglove *Digitalis purpurea*. In some areas, scattered rowan *Sorbus aucuparia* and hawthorn trees were present (TN11).
- 3.2.28. The bracken habitats identified do not qualify as a Priority Habitat.

D1.1 – ACIDIC DRY DWARF SHRUB HEATH

- 3.2.29. The acidic dry dwarf shrub heath habitat parcels were predominantly located in the north-west of the Site (Photo 16).
- 3.2.30. Bilberry and dwarf gorse dominated the acidic dry dwarf shrub heaths in the Site. In this habitat there was also occasional bracken, deergrass *Trichophorum germanicum*, heath bedstraw, sheep's fescue [agg.] and western gorse *Ulex gallii*.
- 3.2.31. Additionally, there was rare heather *Calluna vulgaris* and bell heather *Erica cinerea* found in the acidic dry dwarf shrub heaths. Some scattered trees, including willow and rowan, were also present.
- 3.2.32. The acidic dry dwarf shrub heaths qualify as the Priority Habitat 'Upland Heathland,' with the presence of dwarf shrubs at a cover of at least 25%, and mostly lying between 400 m and 600 m.

G1 – STANDING WATER

- 3.2.33. One pond was identified within the Site, in the northern section of the Site in a sheep-grazed field of marsh/marshy grassland. The pond was considered to have good water quality, with the possibility of fish presence but no waterfowl seen during the field survey. The shallow banks were vegetated with rushes, and it was not possible to determine the depth of the pond during the field survey. Owing to health and safety considerations, it was not possible to identify the submerged aquatic plants within the pond, which offered a coverage of approximately 5%.
- 3.2.34. As it was not possible to determine the aquatic plants present within the pond, it is not possible to rule out the pond as supporting protected and/or notable plant species, and therefore it is not possible to rule out the pond as a Priority Habitat.

G2 – RUNNING WATER

- 3.2.35. Numerous streams were identified throughout the Site, each of which contained slow-flowing water (Photo 18). Water depth varied from 10 cm to 15 cm. Most of the streams were surrounded by steep banks that were vegetated and marshy grassland was typically adjacent to the ditch banks. A mixture of rock, stone and mud ditch substrates were observed.
- 3.2.36. There was limited vegetation within some of the ditches. Where present, species included rare bog pondweed *Potamogeton polygonifolius*, common yellow sedge *Carex demissa*, creeping forget-me-not *Myosotis secunda*, greater spearwort *Ranunculus lingua*, marsh violet *Viola palustris*, navelwort *Umbilicus rupestris* and ragged robin *Silene flos-cuculi*.
- 3.2.37. In some streams in the Site, shoreweed *Littorella uniflora* was locally frequent and a water-milfoil species *Myriophyllum* sp. was locally dominant.
- 3.2.38. These watercourses all lie within 2.5 km of their furthest source and are near natural, and therefore qualify as the Priority Habit 'Rivers.'

I1.1 – INLAND CLIFF

- 3.2.39. There were several areas of inland cliff within the Site (Photo 19), two of which were too small to map (TN19, 25). These areas were exposed and there was no vascular vegetation associated with this habitat.
- 3.2.40. This habitat qualifies as the Priority Habitat 'Inland Rock Outcrop and Scree Habitats.'

J2.5 – WALL

- 3.2.41. Several small walls were identified within the very north and very south of the Site. These were disused dry-stone walls that were in poor condition.
- 3.2.42. The walls do not qualify as a Priority Habitat.

J2.6 – DRY DITCH

- 3.2.43. There were three dry ditches found throughout the Site that were considered likely to hold water for up to six months of the year (Photo 17).
- 3.2.44. The first of these ditches, in the centre of the Site running adjacent to a farm track, had banks up to 1.5 m high, and had a high level of rush coverage.
- 3.2.45. The second dry ditch was in the north-east of the Site. It was vegetated as for the surrounding semi-improved acid grassland, and had very shallow grassy banks.
- 3.2.46. One linear strip of increased abundance of rushes was present, which possibly indicates a very shallow ditch or a subsurface stream (TN12).
- 3.2.47. These areas do not qualify as Priority Habitats.

J5 – OTHER HABITAT

- 3.2.48. An area of hardstanding with two permanent buildings located on it, along with a storage container, was recorded in the south of the Site. One of the buildings was an agricultural barn, used for the storage of agricultural vehicles and hay (TN13). The roof was constructed of corrugated metal with large windows, and the walls were concrete and corrugated metal. The second building was a

residential building constructed of stone with a multi-pitch tile roof (TN14). It was not possible to fully access the buildings to assess them for their potential to support roosting bats.

- 3.2.49. In the centre of the Site was a third building – an agricultural shed with a corrugated metal roof and walls (TN28). The shed was single pitched, with an open front and open windows on the roof.
- 3.2.50. A number of farm single tracks were present throughout the north of the Site. These were either mud or gravel, and were used infrequently by agricultural vehicles or 4x4s.
- 3.2.51. These areas do not qualify as Priority Habitats.

3.3. DAYTIME BAT WALKOVER

- 3.3.1. No Potential Roost Features (PRFs) for bats were identified on any of the trees within the Site. The buildings identified within the Site may have the potential to support roosting bat species; it was not possible to fully assess the buildings as they were located within private land.

3.4. HABITAT SUITABILITY INDEX ASSESSMENT

- 3.4.1. Four ponds were identified within the Site (or within 250 m of the Site boundary) during the desk study and field survey, shown on **Figure 5A.10**. A further five ponds were identified within 500 m but outside of 250 m of the Site. These were not subject to a HSI assessment, owing to land access restrictions.
- 3.4.1. Within 250 m of the Site, Pond 1 (P1) was located west of the Site boundary, on the edge of an infrequently used track (TN9). There was some limited vegetation surrounding the pond for great crested newt egg laying. South of the pond there was sheep grazed habitat and there was a low, slow-flowing stream that flowed into the pond from the east side. As there was limited vegetation/tree cover, the pond had very little shade.
- 3.4.2. Pond 2 (P2) was located within the northern extent of the Site (TN10, Photo 5). This pond was considered likely to have been created by humans relatively recently. There was some vegetation surrounding P2 for great crested newt egg laying, however this may have been of limited suitability due to sheep grazing.
- 3.4.3. Pond 3 (P3) was located to the east of the Site, identified from a search of OS maps and aerial imagery. This pond was in an area of private land, and therefore it was not possible to assess the pond for its suitability to support breeding great crested newt.
- 3.4.4. Pond 4 (P4) was located to the south of the Site, and is Llyn Mawr, within Llyn Mawr SSSI. It is a mesotrophic shallow lake that supports a high number of waterfowl, including pochard *Aythya ferina*, wigeon *Anas penelope*, and goldeneye *Bucephala clangula*.
- 3.4.5. P1, P2 and P4 were subject to a HSI assessment, with scores of 0.59, 0.55 and 0.35 respectively. Full results are shown in **Annex 6**. These scores indicated that P1 and P2 have a 'below average' suitability for great crested newt. Therefore, P1 and P2 provide habitat that is suitable to support great crested newt, and the Site could support populations of great crested newt. DataMapWales and a paper quantifying the status of great crested newt in Wales⁴⁶ indicate that there is suitable habitat for great crested newts approximately 2 km north-east of the Site. The Site appears to be on

⁴⁶ French G. C. A., Wilkinson, J. W., Fletcher, D. H., Arnell, A. P. (2014) Quantifying the Status of Great Crested Newts in Wales. Natural Resources Wales.

the border of the range of great crested newt in Wales⁴⁶. P4 returned a 'poor' suitability to support great crested newt, and therefore the presence of breeding great crested newt within this waterbody is considered unlikely.

3.5. PROTECTED AND NOTABLE SPECIES ASSESSMENT

3.5.1. The potential for the Site to support legally protected species and/or notable species has been assessed using the observations made during the field survey of habitats within and immediately surrounding the Site. Habitats present within the Site are suitable for the following species; further consideration is given below to the likelihood for these species to be present within the Site:

- Badger;
- Bats;
- Brown hare;
- Hedgehog *Erinaceus europaeus*;
- Otter;
- Water vole;
- Birds;
- Amphibians;
- Reptiles;
- Invertebrates; and
- INNS.

3.5.2. The Site does not provide suitable habitat for other protected or notable species and other species, beyond those listed above, will not be considered further in this PEA.

BADGER

3.5.3. One record of badger was identified within 1 km of the Combined Site.

3.5.4. No signs or evidence of badger were identified during the extended habitat survey.

3.5.5. The grassland habitats present within the Site were considered to provide suitable foraging and commuting habitat for badger. However, badger sett building opportunities would likely be limited due to a lack of optimal habitats on the Site, especially lack of extensive woodland areas and hedgerows or lines of trees.

BATS

3.5.6. Seven species of bat were identified within 10 km of the Combined Site. These included brown long-eared bat *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Daubenton's bat *Myotis daubentonii*, lesser horseshoe bat *Rhinolophus hipposideros*, Natterer's bat *Myotis nattereri* and noctule *Nyctalus noctula*. There were also records of myotis and pipistrelle bats not identified to species level.

3.5.7. No bats or evidence of bats were identified during the extended habitat survey.

- 3.5.8. The Site is considered to have suitability to support foraging and commuting bats, given the habitats identified during the extended habitat survey and their distribution within the Site.
- 3.5.9. The Site may provide suitable roosting habitat for bats. No Potential Roost Features (PRFs) were identified on any of the trees within the Site. The buildings identified within the Site may have the potential to support roosting bat species; it was not possible to fully assess the buildings as they were located within private land.

BROWN HARE

- 3.5.10. Nine records of brown hare were identified within 1 km of the Combined Site.
- 3.5.11. Two brown hares were observed during the extended habitat survey. They were located outside of the Site boundary, slightly west of pond 1 (P1) (TN26, Photo 4).
- 3.5.12. Brown hares tend to be found in diverse open habitats. The species prefers areas of short vegetation for feeding at night but uses areas of denser cover for resting and occasional feeding during daylight hours. The species is often found on the edges of the uplands in Wales⁴⁷.
- 3.5.13. Therefore, habitats throughout the Site, including grasslands, scrub and bracken, are considered suitable to support brown hare.

HEDGEHOG

- 3.5.14. One record of hedgehog was identified within 1 km of the Combined Site.
- 3.5.15. No evidence of hedgehog was observed during the field survey. Although areas of habitat suitable to support hedgehog were identified within the Site (scrub and parkland/scattered trees), these areas of habitat were isolated and therefore it is considered unlikely that hedgehog are present within the Site.
- 3.5.16. Hedgehog are therefore not considered further in this report.

OTTER

- 3.5.17. One record of otter was identified within 1 km of the Combined Site.
- 3.5.18. No signs or evidence of otter were identified during the extended habitat survey.
- 3.5.19. Although the ditches and ponds present within the Site could provide suitable commuting and foraging habitat for otter, there was no evidence of otter holts or suitable rocks/tree roots suitable for resting identified during the extended habitat survey. However, there may be suitable resting places outside of the Site within a 250 m buffer from the Site, which may be affected by the Proposed Development, depending on the design.

WATER VOLE

- 3.5.20. No records of water voles were identified within 1 km of the Combined Site.
- 3.5.21. No signs or evidence of water vole were identified during the extended habitat survey; however, suitable habitat for supporting water vole was recorded within the Site.

⁴⁷ Wales Mammal Biodiversity Action Forum (2013). Mammal Action Plans: Brown Hare *Lepus europaeus*. [Available online: <https://www.biodiversitywales.org.uk/Home>]

- 3.5.22. There were several ditches with slow-moving and still water throughout the Site. Water voles occupy watercourses or water bodies such as drainage ditches, ponds, lakes and wetlands, ideally with slow-flowing or still water⁴⁸. Some of the ditch banks were steep sided and vegetated which may provide suitable burrowing habitat and suitable food resources for water vole.
- 3.5.23. In upland areas water vole may also use wet grassland with tussocky vegetation for overground nest sites⁴⁸. It was considered that the Site contained suitable upland marsh habitat for water vole as most of the ditches were directly adjacent to marsh/marshy grassland.

BIRDS

- 3.5.24. A total of 41 species of bird were identified within 1 km of the Combined Site. These are listed within Table B-4 of **Annex 2**. Of these, 38 were identified as Local Biodiversity Action Plan (LBAP) species for Powys County Council, 14 were listed under Section 7 of the Environment (Wales) Act 2016¹⁰, and five were listed within the WCA. These five species included barn owl *Tyto alba*, fieldfare *Turdus pilaris*, goldeneye *Bucephala clangula*, hoopoe *Upupa epops* and red kite *Milvus milvus*.
- 3.5.25. In total, 13 bird species were seen or heard during the habitat survey. These were buzzard *Buteo buteo*, carrion crow *Corvus corone*, chiffchaff *Phylloscopus collybita*, cuckoo *Cuculus canorus*, curlew *Numenius arquata* (TN27), meadow pipit *Anthus pratensis*, raven *Corvus corax*, red kite, robin *Erithacus rubecula*, skylark *Alauda arvensis*, stonechat *Saxicola rubicola*, willow warbler *Phylloscopus trochilus* and wren *Troglodytes troglodytes*.
- 3.5.26. Willow warbler, meadow pipit, cuckoo and curlew are all Red Listed Birds of Conservation Concern (BoCC) in Wales⁴⁹. Cuckoo and curlew are also listed as a Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016¹⁰.
- 3.5.27. The skylark is an Amber Listed BoCC in Wales⁴⁹ and is a Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016¹⁰.
- 3.5.28. The habitats and structures within the Site were considered suitable for common and widespread breeding birds, as well as species listed on the BoCC in Wales. It was considered that the habitats within the Site are unlikely to support nesting habitat suitable for Schedule 1 WCA birds found within the local area (based on bird data in The Birds of Wales)⁵⁰.

AMPHIBIANS

- 3.5.29. The suitability of the Site to support great crested newt is described in **Section 3.4**.
- 3.5.30. Two records of common frog *Rana temporaria* and two records of common toad *Bufo bufo* were identified within 1 km of the Combined Site.
- 3.5.31. Two common frogs were observed in streams or marshy areas in the Site during the extended habitat survey (TN2 and TN20).

⁴⁸ NRW (2015). Water voles: Guidance for woodland creation where water vole are present September 2015. [Available online: <https://naturalresources.wales/media/5602/water-vole-guidance-for-glastir-woodland-creation.pdf>].

⁴⁹ BoCC (2022). Birds of Conservation Concern Wales. [Available online: https://www.bto.org/sites/default/files/publications/birds_of_conservation_concern_wales_4_2022.pdf]

⁵⁰ Pritchard, R. Hughes, J. Spence, M, I. Haycock, B. Brenchley, A. (2021). The Birds of Wales: Adar Cymru. Liverpool University Press.

- 3.5.32. The ditches and the ponds P1 and P2 in the Site are considered likely to support common amphibian species during aquatic stages, including common frogs and common toads. The surrounding grassland may also provide suitable terrestrial habitat for amphibians. Rock and log piles within the Site may provide suitable refugia and hibernacula for amphibian species (TN6, 24, Photos 3, 7).

REPTILES

- 3.5.33. Two records of common lizard *Zootoca vivipara* were identified within 1 km of the Combined Site.
- 3.5.34. No reptiles were observed during the extended habitat survey of the Site, however, suitable habitat for supporting reptiles was recorded within the Site.
- 3.5.35. Bracken, acid dry dwarf shrub heaths and grasslands including marshy grassland and semi-improved acid grassland were considered to be suitable for common lizard, slow worm *Anguis fragilis*, grass snake *Anguis fragilis* and adder *Vipera berus*.
- 3.5.36. Parcels of inland rock outcrop and scree habitats were considered to provide suitable basking opportunities for reptiles.
- 3.5.37. Additionally, there were several rock piles that were considered to be suitable refugia for reptiles within the north-west area of the Site (TN6, Photo 3). In the south of the Site, there were several rock and log piles (TN24, Photo 7) that were considered to be suitable refugia and hibernacula.

INVERTEBRATES

- 3.5.38. Thirteen species of invertebrates were identified within 1 km of the Combined Site. These are listed within Table B-5 of **Annex 2**. All of these species were listed as Section 7 species in the Environment (Wales) Act 2016¹⁰.
- 3.5.39. Relatively large numbers of butterflies, moths, bees, hoverflies, dragonflies and damselflies were observed during the extended habitat survey.
- 3.5.40. It was considered that the mosaic of grassland, bracken and heathland within the Site was suitable to support large numbers of mainly common terrestrial invertebrate species.
- 3.5.41. The ditches within the Site were also considered likely to support mainly common and widespread aquatic invertebrate species.
- 3.5.42. Due to the widespread nature of the habitats present within the Site, and the fact that the Proposed Development is unlikely to lead to isolation of habitats, impacts on invertebrates as a result of the Proposed Development are likely to be minor. Invertebrates are therefore not considered further in this report.

INNS

- 3.5.43. Certain plant species are listed on Schedule 9 of the WCA. It is an offence to plant or otherwise cause these species to grow in the wild.
- 3.5.44. One species of INNS was identified within 1 km of the Combined Site. This was one record of a non-native species of yellow archangel *Lamiastrum galeobdolon subsp. Montanum*.
- 3.5.45. However, it should be noted that an exhaustive INNS survey was beyond the scope of this assessment, and therefore INNS may be present within the Site, but undetected.

NOTABLE PLANTS

- 3.5.46. One notable plant species was identified within 1 km of the Combined Site in the desk study. This included seven records of bluebell *Hyacinthoides non-scripta*, which is listed in schedule 8 of the WCA.
- 3.5.47. Habitats within the Site were not considered suitable to support bluebell, and notable plants are not considered further in this report.

4. DISCUSSION AND RECOMMENDATIONS

- 4.1.1. This section considers the potential for effects on designated sites, legally protected species, legally protected species, notable species and notable habitats as a consequence of the Proposed Development. Where further surveys or detailed assessment of potential effects are required in order to design suitable mitigation this is identified.
- 4.1.2. This PEA, undertaken in 2024, has been undertaken in the absence of detailed design information pertaining to the Proposed Development. As a result, the assessment and recommendations included below are based on a realistic worst-case scenario and should be re-assessed should the Proposed Development design parameters change.

4.2. STATUTORY AND NON-STATUTORY DESIGNATED SITES

- 4.2.1. The Habitats Regulations provide strict protection to sites of international importance. This includes requiring projects or plans to be screened for Likely Significant Effects (LSE) upon SPAs, SACs and candidate SACs (cSACs). Guidance also requires potential SPAs (pSPAs) and Ramsars be subject to the same assessment.
- 4.2.2. Three SACs and twelve SSSIs were returned from the desk study that are within 30 km of the Combined Site and are designated for the presence of bats.
- 4.2.3. One statutory designated site was identified within 20 km of the Combined Site that is designated for the presence of bird species: Berwyn SPA, designated as a breeding site for hen harrier *Circus cyaneus*, merlin *Falco columbarius*, peregrine falcon *Falco peregrinus* and red kite.
- 4.2.4. As such, the Proposed Development must be screened by the competent authority to determine whether any significant harm would result to the designated features of the five European sites and thus identify if any significant effects are likely to result from the development proposals. If the competent authority is unable to conclude that significant effects are not likely, the Proposed Development must be subject to additional assessment in accordance with the Habitats Regulations.
- 4.2.5. SSSIs are subject to strict protection under the WCA. This requires landowners to maintain these sites in favourable condition and works within these sites are managed by the appropriate national statutory body via the consent process. Certain operations within SSSIs require consent; these are specific to each SSSI. Llyn Mawr SSSI is located within the Site. In the absence of a design, the Proposed Development may impact habitats and species present within the SSSI, and therefore SSSI assent is required from the local authority in relation to the Proposed Development. Best practice protections put in place as part of the Proposed Development, which are to be secured via a Construction Environmental Management Plan (CEMP), will protect Llyn Mawr SSSI) and will also serve to protect Llyn Mawr Wildlife Trust Reserve and Llyn Dy Site of Importance for Nature Conservation (SINC).
- 4.2.6. Grofftydd Road Verge Nature Reserve is considered to be sufficiently far from the Site, with no functional connectivity, that the Proposed Development will not impact this site.
- 4.2.7. The Proposed Development should seek to avoid direct and indirect impacts to the B-lines, partially located within the Site. If this is not feasible, the local authority should be consulted before a design is developed.

4.3. HABITATS

- 4.3.1. Two Priority Habitats were identified within the Site during the desk study: Upland heathland and Purple moor-grass and rush pastures. The area of upland heathland in the western extent of the Site was confirmed as being present during the field survey, although some of the area has been encroached by bracken and is therefore no longer a Priority Habitat. Also, within the west of the Site, some of the Upland heathland identified during the desk study was confirmed to be marshy grassland during the field study, although this still qualifies as a Priority Habitat – Purple moor-grass and rush pastures.
- 4.3.2. In the centre of the Site, the area of Upland heathland identified during the desk study was identified as acid grassland, likely degraded as a result of overgrazing. Therefore, this no longer qualifies as a Priority Habitat.
- 4.3.3. The desk study identified an area of Purple moor-grass and rush pastures within the south of the Site. This Priority Habitat was confirmed during the field survey, although to a lesser extent, with some areas degraded into bracken or semi-improved grassland.
- 4.3.4. Several more of the habitats identified during the extended habitat survey likely fall under the category of Priority Habitats under the Environment (Wales) Act 2016¹⁰. Under Section 7 of this legislation all public bodies (including local planning authorities) must ‘take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section and encourage others to take such steps.’
- 4.3.5. The Priority Habitats identified within the Site during the field survey are shown in **Table 4-1** and on **Figure 5A.10**.

Table 4-1 - Priority Habitats within the Site

Priority Habitats	Phase 1 Habitats
Rivers	G2 – Running water
Upland heathland	D1.1 – Acidic dry dwarf shrub heath
Purple moor-grass and rush pastures	B5 – Marsh/marshy grassland
Ponds	G1 – Standing open water
Inland rock outcrops and scree habitats	I1.1 – Inland cliff

- 4.3.6. To comply with planning policy, the Proposed Development would need to demonstrate that there would be no significant loss of these Priority Habitats as a result of the works. If it is not feasible to avoid Priority Habitats, consultation with the local authority should be completed as the design is developed. For any loss of Priority Habitat, replacement habitat commensurate with that lost should be provided within the design.
- 4.3.7. It should be noted that it was not possible to confidently categorise P2 (G1 – Standing open water) as a Priority Habitat, as it was not possible to identify the plant species within the pond. As such, it is recommended that impacts to this habitat are avoided as much as possible. If this is not possible within the Proposed Development design, further surveys may be required in order to establish

whether the pond qualifies as a Priority Habitat. This should be re-visited following the development of the design.

- 4.3.8. It is recommended that a National Vegetation Classification (NVC) is undertaken in accordance with best practice survey guidance (Rodwell, 2006) by surveyors competent in undertaking NVC surveys. Plant species observed within each of the habitat types identified during the extended habitat survey would be recorded in accordance with plant species nomenclature in Stace (2019). The NVC survey would establish the extent and character of protected/notable habitats that are present within the Site.
- 4.3.9. A Groundwater Dependent Terrestrial Ecosystems (GWDTE) assessment should be undertaken alongside the NVC survey, and the data provided to the hydrology team to undertake further assessment if required.

4.4. PROTECTED AND NOTABLE SPECIES

- 4.4.1. The results of the extended habitat survey and protected species assessment highlighted the potential presence of several protected species or species groups of conservation concern within the Site, or within the immediate surroundings of the Site. These are bats, badger, brown hare, otter, water vole, birds, amphibians, reptiles, and INNS. The legal protection afforded to these species is outlined below and, where appropriate, the requirement for further survey and/or mitigation measures is identified.

BATS

- 4.4.2. All species of bats recorded within the UK are protected from killing, injury and disturbance⁵¹ and their roosts protected from damage or destruction under the Habitats Regulations. Protection is also afforded under the WCA with respect to disturbance of individuals occupying places of rest or shelter and obstruction of access to these. Activities that would otherwise constitute an offence under this legislation may be licensed by Natural Resources Wales (NRW) for certain purposes.
- 4.4.3. Certain species of bats, including the Bechstein's bat *Myotis bechsteinii*, greater horseshoe *Rhinolophus ferrumequinum*, lesser horseshoe, noctule *Nyctalus noctula*, brown long-eared bat and soprano pipistrelle *Pipistrellus pygmaeus* are also listed as Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016¹⁰. Public bodies have an obligation to maintain and enhance for this species when carrying out their functions.
- 4.4.4. The Proposed Development could result in the disturbance or destruction of bat roosts, if it affects buildings with suitable roosting features. At present, there is no design for the Proposed Development, however, it is considered unlikely that the buildings within the Site will be impacted, as all are at least 200m from a proposed turbine location⁵². As such, no further surveys in relation to roosting bats are recommended. If the design is changed such that the Proposed Development will impact the buildings within the Site or turbine locations are within 200 m of a building, this recommendation should be revisited.

⁵¹ Disturbance is defined within the Habitats Regulations as that which is likely to impair a species ability to survive, breed or reproduce, hibernate or migrate or to significantly affect the local distribution or abundance of the species.

⁵² NatureScot (2021). Bats and onshore wind turbines – survey, assessment and mitigation.

- 4.4.5. Although the Site was considered to have limited suitability for commuting and foraging bats, the Proposed Development could result in disturbance to these behaviours. Bat activity surveys within the Site were carried out by WSP in 2023 and 2024, and the methods and results of these surveys are detailed in a separate report.

BADGER

- 4.4.6. The Protection of Badgers Act 1992 makes it illegal to wilfully kill, injure or take any badger, or attempt to do so. It also makes it an offence to intentionally or recklessly damage, destroy or obstruct access to any part of a badger sett. Activities that would otherwise constitute an offence under this legislation may be licensed by NRW for certain purposes.
- 4.4.7. No evidence of badger was recorded within the Survey Area during the habitat survey. However, suitable habitat for foraging badger was recorded throughout the Survey Area with sett excavation opportunities limited to dense bracken. Furthermore, badgers are highly mobile and can quickly excavate new setts, meaning that their presence should not be ruled out.
- 4.4.8. The Proposed Development has the potential to present the following risks to badgers:
- Damage to a sett or disturbance of a badger using a sett during vegetation clearance and construction activities.
 - Loss of suitable habitat for badger.
 - Harm to badgers from moving plant or entrapment in excavations.
- 4.4.9. Badger surveys within the Site were carried out in 2025, and the methods and results of these surveys are detailed in a separate report.

BROWN HARE

- 4.4.10. Brown hare are offered protection under Section 10A of the WCA, which protects brown hare from killing at certain times of year. The species is also listed as a Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016¹⁰. Public bodies have an obligation to maintain and enhance for this species when carrying out their functions.
- 4.4.11. The Proposed Development has the potential to lead to the killing/injury of brown hares through vegetation clearance and other intrusive works, and removal of their habitats.
- 4.4.12. For this reason, it is recommended that works are conducted under a Precautionary Method of Works (PMoW).
- 4.4.13. It is likely that potential impacts on brown hare could be avoided through design and implementation of standard mitigation measures during construction works.

OTTER

- 4.4.14. Otters are protected from killing, injury and disturbance and their places of rest or shelter (holts and other resting sites) are protected from damage or destruction under the Habitats Regulations. Protection is also afforded under the WCA with respect to disturbance of individuals occupying places of rest or shelter and obstruction of access to these. Activities that would otherwise constitute an offence under this legislation may be licensed by NRW for certain purposes.
- 4.4.15. Otters are also listed as Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016¹⁰. Public bodies have an obligation under Section 7 to have regard for these species when carrying out their functions.

- 4.4.16. The Site has been assessed as having suitability for supporting otter within the rivers, with potential resting places within 250 m of the Site. Therefore, the Proposed Development has the potential to disturb otters and/or their resting places, as well as causing a loss of habitat suitable to support otter and indirect impacts to river habitat such as pollution.
- 4.4.17. For these reasons, impacts to the rivers should be avoided wherever practicable and works should be carried out as per environmental best practice (Section 4.7) to avoid impact to river habitat. A follow-up riparian mammal survey to fully understand the extent to which otters may be using these stretches of rivers is recommended, as detailed in **Table 4-2**. Ecological avoidance, mitigation and compensation requirements to minimise effects on otters are described in Section 4.6.

WATER VOLE

- 4.4.18. The water vole is protected from killing and injury and its place of rest or shelter (burrow) is protected from damage, destruction or obstruction under the WCA. Additional protection from disturbance is extended to individuals occupying places of rest or shelter. Activities that would otherwise constitute an offence under this legislation may be licensed by NRW for certain purposes.
- 4.4.19. The water vole is also listed as a Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016¹⁰. Public bodies have an obligation to maintain and enhance for this species when carrying out their functions.
- 4.4.20. The steep sided banks present within the ditches and above ground dense marshy grassland vegetation in the Site may provide suitable shelter or protection for water vole. Therefore, the Proposed Development has the potential to injure/kill or disturb water vole, as well as destroy their places of rest.
- 4.4.21. A follow-up riparian mammal survey to fully understand the extent to which otters may be using these stretches of rivers is recommended, as detailed in Table 4-2. Ecological avoidance, mitigation and compensation requirements to minimise effects on water vole are described in Section 4.6.

BIRDS

- 4.4.22. The Habitat Regulations 2017 Part 1 Regulation 10(2) & (3) state that local authorities '*must take such steps in the exercise of their functions as they consider appropriate to contribute to...the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the UK including by means of the upkeep, management and creation of such habitat...*'. The legislation continues to state that economic and recreation requirements must be taken into consideration in considering which measures are appropriate.
- 4.4.23. Under the WCA all wild birds are protected from killing and injury, and their nests and eggs protected from taking, damage and destruction whilst in use. Additional protection is extended to species listed under Schedule 1 of the WCA, meaning it is also an offence to disturb these species at or near the nest, or whilst they have dependent young.
- 4.4.24. Various bird species are also listed as Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016¹⁰. Public bodies have an obligation to maintain and enhance for this species when carrying out their functions.
- 4.4.25. The Site contained a range of habitats, including grasslands, bracken, heath, and line of trees/woodland with suitability to support common and widespread breeding birds. The agricultural

and residential buildings located within the Site (TNs 13, 14, 23 and 28, Photo 9) may also provide roosting opportunities for birds.

- 4.4.26. The Proposed Development construction works should be avoided during the breeding bird season in the first instance. If works must occur within the breeding bird season, any clearance of trees and suitable nesting habitats (including buildings/structures on the Site that birds may nest on/in, and ground habitat suitable to support ground-nesting birds) to be subject to a PMoW and an Ecological Clerk of Works (ECoW), whereby all vegetation to be removed is hand-searched by a suitably qualified ecologist immediately prior to clearance.

IT IS CONSIDERED LIKELY THAT THE PROPOSED DEVELOPMENT COULD RESULT IN DISTURBANCE TO BIRDS DURING THE CONSTRUCTION AND OPERATIONAL PHASES. ORNITHOLOGY SURVEYS AND ASSESSMENTS HAVE BEEN CARRIED OUT BY BSG. THEREFORE, FURTHER SURVEYS ARE NOT RECOMMENDED HERE.

AMPHIBIANS

- 4.4.27. Common frog and common toad are protected under Schedule 5 of the WCA. This includes protection from killing and injury. Great crested newts and common toads are also listed as Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016¹⁰. Public bodies have an obligation to maintain and enhance for this species when carrying out their functions.
- 4.4.28. Two common frogs were observed during the Site visit, and the ditches, streams and terrestrial habitat in the Site was considered suitable to support other common amphibians.
- 4.4.29. Therefore, the Proposed Development presents the risk of killing/injury of common and widespread amphibians through vegetation clearance, and removal of their habitats.
- 4.4.30. Two ponds within 250 m of the Site underwent a HSI assessment and returned a result of 'below average' suitability for great crested newt. However, since the scores are above 0.5 (< 0.5 = poor), further surveys are required to confirm great crested newt presence/likely absence. The Proposed Development risks the killing/injury and/or disturbance to great crested newt and their place of rest/shelter. These further surveys are restricted to mid-March – June, which is the optimal period for great crested newt surveys, and would comprise four to six surveys. They are detailed in **Table 4-2**.
- 4.4.31. Ponds greater than 250 m from Site but less than 500 m were not subject to an HSI. In order to assess the suitability of the Site to support great crested newt, these ponds should be subject to surveys, detailed in **Table 4-2**. If these ponds are assessed as having an HSI score greater than 0.5, further surveys would be required, as described above.
- 4.4.32. If great crested newt are identified within the Site and impacts to great crested newt or great crested newt habitat cannot be avoided, activities that would otherwise constitute an offence under legislation may be licensed by NRW for certain purposes.
- 4.4.33. Impact to all habitat suitable for amphibians (including terrestrial habitat) should be avoided wherever possible. Where this is not practicable, it is recommended that an ECoW is present on site prior to works commencing to deliver a toolbox talk to all site personnel to advise on the possibility of amphibians being present during the works and what to do should they be identified. The ECoW should perform a fingertip search of all vegetation to be cleared immediately prior to clearance, and potential hibernacula should be removed, where required, during the active season under supervision of an ECoW. Works should be conducted under a PMoW.

REPTILES

- 4.4.34. Native widespread reptile species (common or viviparous lizard, adder, grass snake and slow worm) are partially protected under Schedule 5 of the WCA. This includes protection from killing and injury.
- 4.4.35. All reptile species are also listed as Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016¹⁰. Public bodies have an obligation to maintain and enhance for this species when carrying out their functions.
- 4.4.36. No evidence of reptiles was identified during the Site visit, although the habitat was considered to be suitable to support common and widespread reptile species. Therefore, the Proposed Development risks killing/injury of reptiles through vegetation clearance or other intrusive works. Therefore, further surveys are recommended, detailed in Table 4-2.
- 4.4.37. Any refugia and hibernacula, such as the log and stone piles, should be retained and protected where possible. If this is not possible, it should be dismantled under supervision of an ECoW during the active season.
- 4.4.38. Any removal of vegetation suitable to support hibernating reptiles should be carried out in the active season (March to October) to avoid impacts to hibernating reptiles.

INNS

- 4.4.39. Certain plants are listed on Schedule 9 of the WCA. It is an offence to plant or otherwise cause these species to grow in the wild.
- 4.4.40. No INNS were identified during the field survey. However, a non-native yellow archangel listed on Schedule 9 of the WCA was returned from the desk study, and presence of INNS cannot be ruled out.
- 4.4.41. There is, therefore, a possibility that the Proposed Development may risk the spread of Schedule 9 WCA plant species, resulting in an offence under the WCA. To avoid this, any habitat removal should be carried out in the presence of an ECoW and under a PMoW. No additional surveys are considered necessary.

4.5. FURTHER SURVEY REQUIREMENTS

- 4.5.1. Potential ecological constraints for which further surveys are recommended are listed in **Table 4-2**. These are required to ensure legal and planning policy compliance.

Table 4-2 – Key Ecological Constraints and Further Survey Requirements

Ecological Receptor	Potential Constraints	Further Survey Requirements	Seasonal Constraints
Habitats	Loss of habitats.	NVC survey of Priority habitats to inform mitigation measures and inform further Ground Water Dependant Terrestrial Ecosystems.	The optimal period for NVC surveys on habitats identified within the Site is May – August.
Badger	Risk of damage or disturbance to a sett or a badger using its sett during vegetation clearance activities of woodland habitat. Risk of loss of suitable habitat.	A badger survey - of suitable habitat within the Survey Area (which cannot be retained) to determine presence of badgers/setts prior to the commencement of the Proposed Development/clearance of suitable habitat.	Badgers can build setts at any time of year. Licences to exclude and close setts are typically only issued for use between 1st July and 30 th November.
Otter and water vole	Risk of disturbance to otter and water vole and their resting places. Loss of suitable habitat. Risk of indirect impacts to river habitat such as pollution run-off.	Riparian mammal survey – To assess the use of the rivers within the Site and associated habitats by otter and water vole. This will involve a full survey of all of the watercourses within the Site, including 200 m upstream and downstream of the Site boundary extent.	Optimal survey season is considered to be April to September.
Amphibians	Killing/injury of amphibians through construction works.	Further great crested newt surveys are required for the two ponds assessed as having a 'below average' suitability during the field survey (P1 and P2). This could include environmental DNA (eDNA) surveys or four presence/absence surveys per pond. Ponds within 500 m from the Site but greater than 250 m from the Site should be subject to an HSI.	The amphibian and reptile active season is considered to be from late March to September inclusive. Further great crested newt surveys are restricted to the optimal times of mid-March – June. HSI can be carried out at any time of year.

Ecological Receptor	Potential Constraints	Further Survey Requirements	Seasonal Constraints
Reptiles	Killing/injury of reptiles through construction works.	Depending on the area of land to be impacted and design and location of the larger areas of land to be impacted (where the site compound / solar array or battery storage area is confirmed), further targeted reptile surveys may be required to establish presence/likely absence of reptiles and inform mitigation. It is recommended that the further surveys are undertaken following confirmation of the design.	In accordance with best practice guidelines, seven survey visits should be carried out between April and June, and September.

4.6. PRELIMINARY AVOIDANCE, MITIGATION AND COMPENSATION MEASURES

- 4.6.1. To enable compliance with relevant legislation and planning policy, as described above within Sections 4.1-4.4, the following avoidance, mitigation and compensation measures should be designed into the Proposed Development. These will be refined following completion of further survey work recommended in **Table 4-2** above. It should be noted that targeted mitigation measures including but not limited to habitat retention and/or restoration could be required. It is not possible to provide prescriptive measures in the absence of design information for the Proposed Development. Any such measures will need to be developed in parallel with further surveys and as the design for the Proposed Development is developed.
- Any vegetation clearance required as part of the Proposed Development should be carried out outside of the breeding bird season (March – September). Should this not be possible, it will be necessary for an ecological check for the presence of breeding birds. If an active nest is found, clearance will need to stop and a 5 m buffer of retained vegetation will be required until the young have fledged.
 - Any vegetation clearance required as part of the Proposed Development should be carried out under a PMoW with an ECoW present. Information to prevent impacts on the protected species discussed in this report should be documented in a PMoW document.
 - Works should be carried out as per environmental best practice (Section 4.7) to avoid indirect impacts to Wildlife Sites and Priority Habitats, including river habitat.
 - Avoidance of vegetation clearance within Priority Habitats, where practicable. Where this is not possible, provision of replacement habitat, over and above that which is lost, would be required.
 - Avoidance of working in areas where INNS are present, if these are later identified.

4.7. ENVIRONMENTAL GOOD PRACTICE

- 4.7.1. In addition, general environmental protection measures must be implemented during the construction phase of the Proposed Development. Such measures include good environmental practice guidance outlined in the NRW Guidance for Pollution Prevention⁵³ and those outlined by the Construction Industry Research and Information Association guidance⁵⁴. The following minimum standards must be adhered to prevent ecological impacts beyond the Site:
- Measures must be taken to prevent dust and other emissions from construction affecting land beyond the Site.
 - Chemicals and fuels must be stored in secure containers located away from watercourses or water bodies. Spill kits must be available.
 - Excavations must be covered or securely fenced (with no potential access points beneath fencing) when the Site is closed (e.g. overnight) to prevent entrapment of animals.

⁵³ NRW (2018). Guidance for Pollution Prevention. Available online: <https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/>

⁵⁴ CIRIA (2015) Environmental good practice on site (fourth edition) (C741) Charles, P., Edwards, P (eds). CIRIA, London.

- Retained trees must be protected in accordance with BS5837⁵⁵.
- Noise and vibration must be controlled and kept to the minimum necessary.
- Lighting used for construction must be switched-off when not in use and positioned so as not to spill on to adjacent land or retained vegetation within the Site, to minimise disturbance to bats.

4.8. ECOLOGICAL ENHANCEMENT OPPORTUNITIES

- 4.8.1. PPW¹⁴ states ‘*By protecting and enhancing biodiversity, and our natural environment more generally, it will be possible to future proof economic assets in response to the challenges presented by climate change, to promote low carbon and appropriate resource choices which address the causes of climate change and to provide cost effective ecosystems services such as clean air and water.*’
- 4.8.2. Net Benefit for Biodiversity (NBB) in association with development is encouraged by PPW¹⁴ and under Section 6 of Part 1 of the Environment (Wales) Act 2016¹⁰. The below recommendations aim to comply with a NBB approach, by way of delivering an overall improvement in biodiversity without use of a metric. Engaging with these recommendations in the early stages of the Proposed Development would facilitate ecosystem resilience and wider ecosystem benefits being achieved. This approach will support local authorities in achieving their Section 6 duty to “*promote the resilience of ecosystems*” when determining planning applications.
- 4.8.3. To encourage compliance with planning policy the following measures are recommended for inclusion within the Proposed Development where possible. These measures should be included within an NBB report and outline Habitat Management Plan (oHMP):
- Installation of bird and bat boxes in trees to provide additional refuge sites;
 - If planting is required, no planting of INNS within the Site;
 - Planting of pollinator friendly native species of local provenance for any habitat lost which is suitable for invertebrates.
 - Enhancing connectivity through the planting of shrubs and trees where appropriate; and
 - Sustainable drainage systems (SuDS) to be incorporated into the design of the Proposed Development to reduce the effects of water runoff and provide ecological benefits. To facilitate this, ecological and landscape design input would be required in the design of SuDS features to ensure that the relevant standards are met and to ensure benefits for biodiversity are achieved.

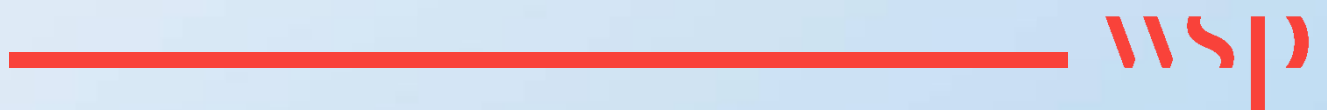
⁵⁵ British Standards Institute (2012) BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations. BSI, London.

5. CONCLUSIONS

- 5.1.1. The Proposed Development is likely to impact upon protected and/or notable species and habitats due to the potential for removal of some habitats within the Site during the construction phase, and continuing through the operational phase. During the operational phase of the Proposed Development, there may be impacts to species such as commuting/foraging birds and bats.
- 5.1.2. The Combined Site lies 6 km from the closest statutory designated site designated for the presence of bats and 15 km from Berwyn SPA, designated for bird species. An HRA Stage 1: Screening assessment for SACs and SPAs should be undertaken.
- 5.1.3. Llyn Mawr SSSI is located within the Site. Should there be any impact to the SSSI as a result of the Proposed Development, SSSI assent would be required from the local authority with regards to this SSSI.
- 5.1.4. Habitats recorded within the Site comprise: coniferous woodland, dense/continuous scrub, semi-improved acid grassland, semi-improved neutral grassland, improved grassland, marsh/marshy grassland, bracken, acidic dry dwarf shrub heath, standing water, running water, inland cliff, dry ditch, and other habitat. The following Priority Habitats were identified within the Site: Rivers; Upland heathland; Purple moor-grass and rush pastures; Ponds; and Inland rock outcrops and scree habitats. If it is not feasible to avoid Priority Habitats within or adjacent to the Site, consultation with Powys County Council should be completed as part of design development. For any loss of Priority Habitat, replacement habitat commensurate or greater than that lost should be provided within the design.
- 5.1.5. It is recommended that a NVC survey is undertaken within the Site, to allow a detailed assessment of protected/notable habitats within the Site. A GWDTE assessment is also recommended to establish whether further hydrology assessment is required.
- 5.1.6. The Proposed Development has the potential to impact upon protected and/or notable species including bats, badger, brown hare, otter, water vole, birds, amphibians, reptiles and INNS. Further targeted surveys for otter, water vole, great crested newt and reptiles are recommended, based on the current understanding of the Proposed Development.
- 5.1.7. Preliminary avoidance and/or mitigation measures are recommended for brown hare, birds, common and widespread amphibians and reptile species and INNS in the form of protection/retention of habitats, ecological supervision and/or PMoW.
- 5.1.8. Results of the surveys recommended as part of this assessment will inform the need for any further licensing and/or mitigation requirements and help inform the detailed design of the proposals in line with national and local planning policy and legislation, including the delivery of biodiversity enhancements in accordance with duties under Section 6. The recommendations detailed above should be re-visited following the issue of a preliminary design.

Annex 1

RELEVANT LEGISLATION AND PLANNING POLICY



ENGLAND & WALES LEGISLATION AND POLICY CONTEXT

This report has been compiled with reference to relevant wildlife legislation, planning policy and the UK Biodiversity Framework. An overview and context of relevant legislation is provided, with the relevant protection each species groups or species receives summarised in **Table 0-1**.

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

Protected birds, animals and plants are listed under Schedules 1, 5, 8 respectively of the WCA, while Schedule 9 lists non-native and/or invasive species the spread of which in the wild is prohibited by the WCA. A description of these Schedules and their meaning is provided below.

Under the WCA (England and Wales) all birds, their nests and eggs (with exception of species listed under Schedule 2) are protected by the WCA. It is an offence to:

- Intentionally kill, injure, or take any wild bird,
- Take or destroy an egg of any wild bird.
- Damage or destroy the nest of any wild bird (whilst being built, or in use). Under the WCA the clearance of vegetation within the survey area boundary, or immediately adjacent to the survey area during the bird nesting season could result in an offence occurring by the disruption or destruction of nest sites. The bird breeding season can be taken to occur between March - August inclusive, although is subject to variations based on species, geographical and seasonal factors.

Schedule 1

Birds listed under Schedule 1 of the WCA⁵⁶ are afforded additional protection with regard to intentional or reckless disturbance whilst nest-building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Schedule 5

Species listed in Schedule 5 can either be fully protected or be partially protected under Section 9, which makes it unlawful to intentionally:

- Part 1: kill, injure or take;
- Part 2: possess or control (live or dead animal, part or derivative);
- Part 4 (a): damage or destruct any structure used for shelter or protection;
- Part 4 (b): disturb them in a place of shelter or protection;
- Part 4 (c): obstruct access to place of shelter or protection;
- Part 5 (a): sell, offer for sale, possess or transport for the purpose of sale (live or dead animal, part or derivative);
- Part 5 (b): advertise for buying or selling.

Schedule 8

The Act makes it an offence (subject to exceptions) to pick, uproot, trade in, or possess (for the purposes of trade) any wild plant listed in Schedule 8, and prohibits the unauthorised intentional uprooting of such plants.

Schedule 9

Invasive species listed under Schedule 9 are prohibited from release into the wild and the Act prohibits planting or “causing to grow” in the wild of any plant species listed in Schedule 9. It should be noted that certain bird species listed on Schedule 1 of the WCA are also listed on Schedule 9 to prevent release of non-native and captive individuals, this includes barn owl, red kite, goshawk and corncrake.

Countryside Rights of Way Act 2000 (CRoW Act)

The CRoW Act has amended the WCA in England and Wales strengthening the protection afforded to Sites of Special Scientific Interest (SSSI) and the legal protection for threatened species. It adds the word ‘reckless’ to the wording of the offences listed under Section 9(4) of the WCA. This alteration makes it an offence to recklessly commit an offence, where previously an offence had to be intentional to result in a breach of legislation.

⁵⁶ To view the current list of Schedule 1 listed birds visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/1> [Accessed 19.03.24].

Natural Environment and Rural Communities (NERC) Act 2006

Species and Habitats of Principal Importance in England and Wales are listed under Section 41 and Section 42 respectively of the NERC Act. The Section 41 and 42 lists detail species that are of principal importance for the conservation of biodiversity in England and Wales, and should be used to guide decision-makers such as local and regional authorities when implementing their duty to have regard for the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006.

The Environment (Wales) Act 2016

The Environment (Wales) Act 2016 (<http://www.legislation.gov.uk/anaw/2016/3/contents/enacted>) puts in place the legislation needed to plan and manage Wales' natural resources in a more proactive, sustainable and cohesive way. Section 7 replaces the duty in Section 42 of the NERC Act 2006 and it places a duty on the Welsh Ministers to publish, review and revise lists of living organisms and types of habitats which they consider are of key significance to sustain and improve biodiversity in Wales. The species and habitat lists are identical to those in Section 42 but it should be noted it is currently under review (23.03.2017).

The Protection of Badgers Act (1992)

It is an offence to wilfully take, kill, injure, possess or ill-treat a badger. Under the Act their setts are protected against intentional or reckless interference. Sett interference includes damaging or destroying a sett, obstructing access to any part of the sett, or disturbance of a badger whilst it is occupying a sett. The Act defines a badger sett as 'any structure or place, which displays signs indicating the current use by a badger' and Natural England (NE) takes this definition to include seasonally used setts that are not occupied but that show sign of recent use by badgers (Natural England, 2009⁵⁷).

If impacts to badgers or their setts are unavoidable then authorised sett disturbance requires a licence.

The UK Post-2010 Biodiversity Framework (2011-2020) (JNCC and DEFRA, 2012)

This Framework lists the UK's most threatened species and habitats and sets out targets and objectives for their management and recovery. The UK Biodiversity Action Plan (BAP) process is delivered nationally, regionally and locally and should be used as a guide for decision-makers to have regards for the targets set by the framework and the goals they aim to achieve. The UK BAP has now been replaced by the UK Post-2010 Biodiversity Framework, however, it contains useful information on how to characterise important species assemblages and habitats which is still relevant (UK Post-2010 Biodiversity Framework, 2012⁵⁸).

The Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds Directive in England and Wales. The Regulations came into force on 30th November 2017, and extend to England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters). In Scotland, the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the Conservation (Natural Habitats &c.) Regulations 1994. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland.

All species listed under Annex IV of the Habitats Directive require strict protection and are known as European Protected Species (EPS). Under Regulation 42 of the Habitats Regulations it is unlawful to:

- Deliberately kill, capture or disturb;
- Deliberately take or destroy the eggs of; and
- Damage or destroy the breeding site/resting place of any species protected under this legislation.

If the Ecologist determines that impacts to an EPS are unavoidable then the works may need to be carried out under a site specific mitigation licence from Natural England (NE) or Natural Resources Wales (NRW). Low Impact Class licences are also available in both England and Wales for bats and great crested newts. This enables Registered Low Impact Consultants to undertake certain low impact activities reducing the EPS application paperwork and process length.

Certain EPS are also listed under Annex II of the Habitats Directive and are afforded protection by the establishment of core areas of habitat known as Special Areas of Conservation. This means these species are a relevant consideration in a Habitats Regulations Assessment (HRA).

⁵⁷ Natural England, June 2009, Protection of Badgers Act 1992 (as amended), Guidance on 'Current Use' in the definition of a Badger Sett WMLG17, Natural England, Peterborough.

⁵⁸ JNCC and Defra (on behalf of the Four Countries' Biodiversity Group), July 2012, UK Post-2010 Biodiversity Framework, Available from: http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf [Accessed 19.03.24].

The Birds Directive seeks to maintain populations of all wild bird species across their natural range (Article 2). All bird species listed under Annex I⁵⁹ of the Birds Directive are rare or vulnerable and afforded protection by the classification of Special Protection Areas (SPAs), these are also designated under all regularly occurring migratory species, with regard to the protection of wetlands of international importance (Article 4). This means these bird species and communities are a relevant consideration in HRA.

Table 0-1 - Key Species and National Wildlife Legislation, Policy and Biodiversity Framework Applicable in England & Wales

Species	Legislation, Planning Policy and UK Biodiversity Framework							
	Wildlife and Countryside Act 1981 (as amended), (WCA)				The Conservation of /Habitats and Species Regulations 2010 (as amended) (Habitats Regulations) - Regulation 41	Natural Environment and Rural Communities (NERC) Act 2006 / The Environment(Wales) Act (2016)	The Protection of Badgers Act 1992	The UK Post-2010 Biodiversity Framework 2011-2020 (JNCC and DEFRA, 2012)
	Schedule1	Schedule 5	Schedule 8	Schedule 9	European Protected Species (Annex IV of the EC Habitats Directive)			
Badger							✓	
Bats		✓ ⁶⁰ (part)			✓ ⁶¹	✓ ⁶²		✓ ⁶³
Hazel Dormouse		✓ 5(part)			✓	✓		✓
Otter		✓ 5(part)			✓	✓		✓
Water vole		✓ ⁶⁴ (full)				✓		✓
Birds	✓			✓ ⁶⁵		✓ ⁶⁶		✓ ⁶⁷

⁵⁹ To view birds listed under Annex I visit: http://ec.europa.eu/environment/nature/conservation/wildbirds/threatened/index_en.htm [Accessed 19.03.24].

⁶⁰ These species are partially protected under section 9(4)(b), (4)(c) and (5).

⁶¹ Only Barbastelle (Barbastella barbastellus), Bechstein's bat (Myotis bechsteinii), greater horseshoe bat (Rhinolophus ferrumequinum) and lesser horseshoe bat (Rhinolophus hipposideros) are listed on Annex II of the Habitats Directive.

⁶² Greater horseshoe bat, lesser horseshoe bat, Bechstein's bat, noctule (Nyctalus noctula), soprano pipistrelle (Pipistrellus pygmaeus), brown long-eared bat (Plecotus auritus) and barbastelle are listed as Species of Principal Importance in England with the addition of common pipistrelle (Pipistrellus pipistrellus) in Wales listed under

Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

⁶³ Barbastelle bat, Bechstein's bat, noctule, soprano pipistrelle, brown long-eared bat, greater horseshoe bat, lesser horseshoe bat are listed as UK BAP species of bat.

⁶⁴ Class Licences are available to Registered Consultants to intentionally disturb, damage or destroy water vole burrows or to displace water voles from their burrows in relation to a development proposal where the licensed action provides a conservation benefit for water voles. Certain displacement operations may be carried out under a Class licence by a registered person in England, however in Wales all displacement operations must be carried out under a site specific licence.

⁶⁵ To view plants and animals listed on Schedule 9 Part 1 visit <http://www.legislation.gov.uk/ukpga/1981/69/schedule/9> [Accessed 19.03.24]

⁶⁶ There are 49 species of birds listed as Species of Principal Importance in England in Section 41 of the NERC Act 2006 and 51 species in Wales under Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

⁶⁷ To view the current list of UK BAP priority birds visit: <http://jncc.defra.gov.uk/page-5163> [Accessed 19.03.24].

Species	Legislation, Planning Policy and UK Biodiversity Framework							
	Wildlife and Countryside Act 1981 (as amended), (WCA)				The Conservation of /Habitats and Species Regulations 2010 (as amended) (Habitats Regulations) - Regulation 41	Natural Environment and Rural Communities (NERC) Act 2006 / The Environment(Wales) Act (2016)	The Protection of Badgers Act 1992	The UK Post-2010 Biodiversity Framework 2011-2020 (JNCC and DEFRA, 2012)
	Schedule1	Schedule 5	Schedule 8	Schedule 9	European Protected Species (Annex IV of the EC Habitats Directive)			
Reptiles		✓ ⁶⁸ (part)		✓ ⁹	✓ ⁶⁹	✓ ⁷⁰		✓ ⁷¹
Amphibians		✓ ⁷² (part)		✓ ⁷³	✓ ^{74, 75}	✓ ⁷⁶		
White-clawed Crayfish		✓ ⁷⁷ (partial)			✓ ⁷⁸	✓		✓

⁶⁸ The four common reptile species, Adder (*Vipera berus*), Grass snake (c), Common lizard (*Zootoca vivipara*) and Slow worm (*Anguis fragilis*) are offered partial protection under section 9(5). The rarer UK reptile species (Smooth snake (*Coronella austriaca*) and Sand lizard (*Lacerta agilis*)) are partially protected under section 9(4)(b) and (c) and (5).

⁶⁹ Smooth snake (*Coronella austriaca*) and Sand lizard (*Lacerta agilis*) are the only reptiles to be designated as European Protected Species.

⁷⁰ All 6 reptile species are listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006 and 5 species, excluding smooth snake, listed under Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

⁷¹ To view the current list of UK BAP priority herptile species visit: <http://jncc.defra.gov.uk/page-5166> [Accessed 19.03.24].

⁷² The four common reptile species, Adder (*Vipera berus*), Grass snake (*Natrix natrix*), Common lizard (*Zootoca vivipara*) and Slow worm (*Anguis fragilis*) are offered partial protection under section 9(5). The rarer UK reptile species (Smooth snake (*Coronella austriaca*) and Sand lizard (*Lacerta agilis*)) are partially protected under section 9(4)(b) and (c) and (5).

⁷³ Common frog (*Rana temporaria*), Common toad (*Bufo bufo*), Smooth newt (*Lissotriton vulgaris*) and Palmate newt (*Lissotriton helveticus*) are offered partial protection under section 9(5). Great crested newt (*Triturus cristatus*) and Natterjack toad (*Epidalea calamita*) are offered partial protection under section 9(4)(b) and (c) and (5). Pool frog (*Pelophylax lessonae*) is offered partial protection under section 9(4)(b) and (c)(1) only and with respect to England only.

⁷⁴ Great crested newt, Natterjack toad and Pool frog are the only amphibians to be designated European Protected Species.

⁷⁵ Great crested newt is the only amphibian listed on Annex II of the Habitats Directive.

⁷⁶ Great crested newt, Natterjack toad and Common toad are listed as Species of Principal Importance in England in Section 41 of the NERC Act 2006 and under Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

⁷⁷ Under the Wildlife and Countryside Act it is illegal to take or sell white clawed crayfish under the WCA. A licence is required to survey (hand net or trap) for the species. To undertake work within WCC inhabited rivers a Class Licence maybe issued by the relevant authority to move WCC away from harm prior to works. Although WCC are not protected from killing or injury Natural England state in their Class licence that due to declining numbers all efforts should be made to conserve the species.

⁷⁸ White clawed crayfish are listed under Annex II and V of the Habitats Directive.

Species	Legislation, Planning Policy and UK Biodiversity Framework							
	Wildlife and Countryside Act 1981 (as amended), (WCA)				The Conservation of /Habitats and Species Regulations 2010 (as amended) (Habitats Regulations) - Regulation 41	Natural Environment and Rural Communities (NERC) Act 2006 / The Environment(Wales) Act (2016)	The Protection of Badgers Act 1992	The UK Post-2010 Biodiversity Framework 2011-2020 (JNCC and DEFRA, 2012)
	Schedule 1	Schedule 5	Schedule 8	Schedule 9	European Protected Species (Annex IV of the EC Habitats Directive)			
Invertebrates		✓ ⁷⁹ (full/part)		✓	✓ ^{80, 81}	✓ ⁸²		✓ ⁸³
Fish		✓ ⁸⁴ (full/part)		✓ ⁹	✓ ^{85, 86}	✓ ⁸⁷		✓ ⁸⁸
Plants			✓ ⁸⁹	✓ ⁹	✓ ^{90, 91}	✓ ⁹²		✓ ⁹³

⁷⁹ To view the current list of invertebrates that are protected under this Act either in part or full visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/5> [Accessed 19.03.24].

⁸⁰ The Large blue butterfly (*Maculinea arion*), Fisher's estuarine moth (*Gortyna borelii lunata*) and Lesser whirlpool ram's-horn snail (*Anisus vorticulus*) are the only invertebrates to be designated European Protected Species.

⁸¹ There are currently twelve invertebrates listed in Annex II of the Habitats Directive; White-clawed crayfish (*Austropotamobius pallipes*), Southern damselfly (*Coenagrion mercuriale*), Marsh fritillary butterfly (*Eurodryas aurinia*), Violet click beetle (*Limoniscus violaceus*), Stag beetle (*Lucanus cervus*), Freshwater pearl mussel (*Margaritifera margaritifera*), Narrow-mouthed whorl snail (*Vertigo angustior*), Round-mouthed whorl snail (*Vertigo genesii*), Geyer's whorl snail (*Vertigo geyeri*), Desmoulin's whorl snail (*Vertigo moulinsiana*), Lesser whirlpool ram's-horn snail (*Anisus vorticulus*) and Fisher's estuarine moth (*Gortyna borelii lunata*).

⁸² There are currently 379 invertebrate species (not including marine species) listed as Species of Principal Importance in England http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0ahUKEwivvu7J9trSAhXiCsAKHX4TBGcQFggvMAM&url=http%3A%2F%2Fpublications.naturalengland.org.uk%2Ffile%2F6518755878240256&usq=AFQjCNEpiUWYuOqhVcfSDvi_3iK2TJytfQ and 188 species in Wales http://www.eryri-npa.gov.uk/_data/assets/pdf_file/0003/486156/SpeciesList.pdf listed under Section 41 of the NERC Act 2006 and listed under Section 7 of the of the Environment (Wales) Act 2016. [Accessed 19.03.24].

⁸³ To view the current list of UK BAP priority invertebrates visit: <http://jncc.defra.gov.uk/page-5169> [Accessed 19.03.24].

⁸⁴ To view the current list of fish either part or fully protected under the Act visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/5> [Accessed 19.03.24].

⁸⁵ Sturgeon (*Acipenser sturio*) is the only fish to be designated a European Protected Species.

⁸⁶ There are eight fish species listed on Annex II of the Habitats Directive. To view the current list visit: <http://jncc.defra.gov.uk/page-1523> [Accessed 19.03.24].

⁸⁷ There are 35 species of fish listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006 and 10 species in Wales listed under Section 7 of the Environment (Wales) Act 2016.

⁸⁸ To view the current list of UK BAP priority fish visit: <http://jncc.defra.gov.uk/page-5164> [Accessed 19.03.24].

⁸⁹ To view the current list of Schedule 8 listed plants visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/8> [Accessed 19.03.24].

⁹⁰ There are nine plant species designated as European Protected Species. To view the current list visit: <http://www.legislation.gov.uk/ukpga/2010/490/schedule/5/made> [Accessed 19.03.24].

⁹¹ To view the current list of plant species on Annex II of the Habitats Directive visit: <http://jncc.defra.gov.uk/page-1523> [Accessed 19.03.24].

⁹² There are currently 152 vascular plants listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006 and 77 species in Wales listed under Section 7 of the Environment (Wales) Act 2016.³¹ To view the current list of UK BAP priority plants visit: <http://jncc.defra.gov.uk/page-5171> and <http://jncc.defra.gov.uk/page-5168> [Accessed 19.03.24].

⁹³ To view the current list of UK BAP priority plants visit: <http://jncc.defra.gov.uk/page-5171> and <http://jncc.defra.gov.uk/page-5168> [Accessed 19.03.24].

Annex 2

DESK STUDY RESULTS

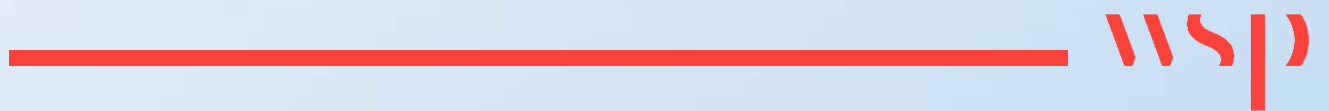


Table B-1 – Records of mammal species within 1 km of the Combined Site

Common name	Latin name	Number of records within 1 km	Conservation Status
Brown hare	<i>Lepus europaeus</i>	9	S7, LBAP
Eurasian badger	<i>Meles meles</i>	1	BA, LBAP
Eurasian otter	<i>Lutra lutra</i>	1	EPS, WCA5, S7
Eurasian water-shrew	<i>Neomys fodiens</i>	1	LBAP
Weasel	<i>Mustela nivalis</i>	1	LBAP
Hedgehog	<i>Erinaceus europaeus</i>	1	S7, LBAP

Table B-2 – Records of bat species within 10 km of the Combined Site

Common name	Latin name	Number of records within 10 km	Conservation Status
Brown long-eared bat	<i>Plecotus auritus</i>	12	EPS, WCA5, S7, LBAP
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	35	EPS, WCA5, S7, LBAP
Daubenton's bat	<i>Myotis daubentonii</i>	5	EPS, WCA5, LBAP
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	1	EPS, WCA5, S7, LBAP
Myotis bat species	<i>Myotis</i>	6	EPS, WCA5
Natterer's bat	<i>Myotis nattereri</i>	5	EPS, WCA5, LBAP
Noctule bat	<i>Nyctalus noctula</i>	7	EPS, WCA5, S7, LBAP
Pipistrelle bat species	<i>Pipistrellus</i>	1	EPS, WCA5

Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	22	EPS, WCA5, S7, LBAP
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Table B-3 – Records of reptile and amphibian species within 1 km of the Combined Site

Common name	Latin name	Number of records within 1 km	Conservation Status
Common frog	<i>Rana temporaria</i>	2	WCA5, LBAP
Common lizard	<i>Zootoca vivipara</i>	2	WCA5, S7, LBAP
Common toad	<i>Bufo bufo</i>	2	WCA5, S7, LBAP

Table B-4 – Records of bird species within 1 km of the Combined Site

Common name	Latin name	Number of records within 1 km	Conservation Status
Barn owl	<i>Tyto alba</i>	6	WCA1.1, WCA9, LBAP
Black-headed gull	<i>Chroicocephalus ridibundus</i>	4	S7
Blue tit	<i>Cyanistes caeruleus</i>	2	LBAP
Buzzard	<i>Buteo buteo</i>	3	LBAP
Cormorant	<i>Phalacrocorax carbo</i>	1	LBAP
Cuckoo	<i>Cuculus canorus</i>	4	S7
Curlew	<i>Numenius arquata</i>	3	S7, LBAP
Dunnock	<i>Prunella modularis</i>	2	S7, LBAP
Fieldfare	<i>Turdus pilaris</i>	1	WCA1.1, LBAP
Garden warbler	<i>Sylvia borin</i>	2	LBAP

Goldeneye	<i>Bucephala clangula</i>	3	WCA1.2, LBAP
Goldfinch	<i>Carduelis carduelis</i>	1	LBAP
Goosander	<i>Mergus merganser</i>	3	LBAP
Grasshopper warbler	<i>Locustella naevia</i>	1	S7, LBAP
Great spotted woodpecker	<i>Dendrocopos major</i>	1	LBAP
Great tit	<i>Parus major</i>	2	LBAP
Grey wagtail	<i>Motacilla cinerea</i>	1	LBAP
Herring gull	<i>Larus argentatus</i>	2	S7, LBAP
Hoopoe	<i>Upupa epops</i>	1	WCA1.1
House martin	<i>Delichon urbicum</i>	2	LBAP
House sparrow	<i>Passer domesticus</i>	2	S7, LBAP
Kestrel	<i>Falco tinnunculus</i>	5	S7, LBAP
Lesser black-backed gull	<i>Larus fuscus</i>	1	LBAP
Linnet	<i>Linaria cannabina</i>	4	S7, LBAP
Pied wagtail	<i>Motacilla alba</i>	5	LBAP
Red kite	<i>Milvus milvus</i>	5	WCA1.1, WCA9, LBAP
Redstart	<i>Phoenicurus phoenicurus</i>	1	LBAP
Reed Bunting	<i>Emberiza schoeniclus</i>	3	S7, LBAP
Reed warbler	<i>Acrocephalus scirpaceus</i>	1	LBAP

Short-eared owl	<i>Asio flammeus</i>	2	LBAP
Skylark	<i>Alauda arvensis</i>	3	S7, LBAP
Snipe	<i>Gallinago gallinago</i>	1	LBAP
Song thrush	<i>Turdus philomelos</i>	1	S7, LBAP
Stonechat	<i>Saxicola rubicola</i>	3	LBAP
Swallow	<i>Hirundo rustica</i>	2	LBAP
Tree sparrow	<i>Passer montanus</i>	1	S7, LBAP
Tufted duck	<i>Aythya fuligula</i>	5	LBAP
Wheatear	<i>Oenanthe oenanthe</i>	2	LBAP
Whinchat	<i>Saxicola rubetra</i>	3	LBAP
Whitethroat	<i>Curruca communis</i>	1	LBAP
Yellowhammer	<i>Emberiza citrinella</i>	1	S7, LBAP

Table B-5 – Records of invertebrate species within 1 km of the Combined Site

Common name	Latin name	Number of records within 1 km	Conservation Status
Autumnal rustic	<i>Eugnorisma glareosa</i>	1	S7
Broom moth	<i>Ceramica pisi</i>	1	S7
Dusky brocade	<i>Apamea remissa</i>	1	S7
Feathered gothic	<i>Tholera decimalis</i>	1	S7
Galium carpet	<i>Epirrhoe galiata</i>	1	S7
Garden tiger	<i>Arctia caja</i>	2	S7

Ghost moth	<i>Hepialus humuli</i>	1	S7
Minor shoulder-knot	<i>Brachylomia viminalis</i>	1	S7
Oblique carpet	<i>Orthonama vittata</i>	1	S7
Shaded broad-bar	<i>Scotopteryx chenopodiata</i>	1	S7
Small heath	<i>Coenonympha pamphilus</i>	4	S7
Small pearl-bordered fritillary	<i>Boloria selene</i>	4	S7, LBAP
Wall	<i>Lasiommata megera</i>	1	S7

Table B-6 – Records of notable plant species within 1 km of the Combined Site

Common name	Latin name	Number of records within 1 km	Conservation Status
Bluebell	<i>Hyacinthoides non-scripta</i>	7	WCA8
Variegated yellow archangel	<i>Lamium galeobdolon subsp. montanum</i>	1	WCA9, INNS

Annex 3

PLANT SPECIES RECORDED



Table 0-1 – Plant Species Recorded

Common Name	Latin Name	Frequency (DAFOR)
B5 – Marsh/marshy grassland		
Broad buckler-fern	<i>Dryopteris dilatata</i>	R
Bulbous buttercup	<i>Ranunculus bulbosus</i>	R
Carnation sedge	<i>Carex panicea</i>	R
Compact rush	<i>Juncus conglomeratus</i>	O
Field wood-rush	<i>Luzula campestris</i>	R
Grey willow (likely)	<i>Salix cinerea</i>	R
Hare's-tail cottongrass	<i>Eriophorum vaginatum</i>	R
Heath bedstraw	<i>Galium saxatile</i>	O
Marsh thistle	<i>Cirsium palustre</i>	O
Purple moor-grass	<i>Molinia caerulea</i>	D
Round-leaved sundew	<i>Drosera rotundifolia</i>	LF
Sharp-flowered rush	<i>Juncus acutiflorus</i>	F
Sheep's fescue [agg.]	<i>Festuca ovina</i> agg.	O
Soft rush	<i>Juncus effusus</i>	F
Soft shield-fern	<i>Polystichum setiferum</i>	R
Star sedge	<i>Carex echinata</i>	O
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	O
Toad rush [agg.]	<i>Juncus bufonius</i> agg.	R
Tormentil	<i>Potentilla erecta</i>	O
B12 – Semi-improved acid grassland		
Bilberry	<i>Vaccinium myrtillus</i>	O
Bugle*	<i>Ajuga reptans</i>	R
Cat's-ear*	<i>Hypochaeris radicata</i>	R
Common bird's-foot-trefoil*	<i>Lotus corniculatus</i>	R
Common chickweed*	<i>Stellaria media</i>	R

Common Name	Latin Name	Frequency (DAFOR)
Compact rush	<i>Juncus conglomeratus</i>	R
Creeping buttercup*	<i>Ranunculus repens</i>	R
Crested dog's-tail	<i>Cynosurus cristatus</i>	R
Dwarf gorse	<i>Ulex minor</i>	O
Field wood-rush	<i>Luzula campestris</i>	R
Foxglove*	<i>Digitalis purpurea</i>	R
Groundsel*	<i>Senecio vulgaris</i>	R
Heath bedstraw	<i>Galium saxatile</i>	F
Heath milkwort	<i>Polygala serpyllifolia</i>	LF
Heath rush	<i>Juncus squarrosus</i>	F
Marsh thistle	<i>Cirsium palustre</i>	O
Marsh willowherb*	<i>Epilobium palustre</i>	R
Mat-grass	<i>Nardus stricta</i>	F
Mossy saxifrage*	<i>Saxifraga hypnoides</i>	R
Nettle*	<i>Urtica dioica</i>	R
Perennial rye-grass*	<i>Lolium perenne</i>	R
Rosebay willowherb*	<i>Chamaenerion angustifolium</i>	R
Sheep's fescue [agg.]	<i>Festuca ovina</i> agg.	F
Sheep's sorrel [agg.]	<i>Rumex acetosella</i>	O
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	F
Tormentil	<i>Potentilla erecta</i>	F
Tufted hair-grass	<i>Deschampsia caespitosa</i>	R
White clover*	<i>Trifolium repens</i>	O
Yorkshire-fog	<i>Holcus lanatus</i>	F
* More common in areas of intensive disturbance (adjacent to bare ground track) and in intensely grazed fields (sheep and cattle)		
C1 – Bracken		

Common Name	Latin Name	Frequency (DAFOR)
Bracken	<i>Pteridium aquifolium</i>	D
Dwarf gorse	<i>Ulex minor</i>	R
Foxglove	<i>Digitalis purpurea</i>	R
B2.2 – Semi-improved neutral grassland		
Autumn hawkbit	<i>Scorzoneroides autumnalis</i>	R
Broad-leaved dock	<i>Rumex obtusifolius</i>	R
Cat's-ear	<i>Hypochaeris radicata</i>	R
Common bird's-foot-trefoil	<i>Lotus corniculatus</i>	R
Common chickweed	<i>Stellaria media</i>	O
Compact rush	<i>Juncus conglomeratus</i>	O
Creeping buttercup	<i>Ranunculus repens</i>	O
Crested dog's-tail	<i>Cynosurus cristatus</i>	O
Germander speedwell	<i>Veronica chamaedrys</i>	R
Heath milkwort	<i>Polygala serpyllifolia</i>	R
Marsh thistle	<i>Cirsium palustre</i>	O
Nettle	<i>Urtica dioica</i>	LF
Perennial rye-grass	<i>Lolium perenne</i>	O
Pignut	<i>Conopodium majus</i>	O
Pineapple weed	<i>Matricaria discoidea</i>	LF
Rough meadow-grass	<i>Poa trivialis</i>	R
Selfheal	<i>Prunella vulgaris</i>	R
Sheep's fescue [agg.]	<i>Festuca ovina agg.</i>	D
Sheep's sorrel [agg.]	<i>Rumex acetosella</i>	F
Shepherd's purse	<i>Capsella bursa-pastoris</i>	R
Soft rush	<i>Juncus effusus</i>	D
Spear thistle	<i>Cirsium vulgare</i>	R
Star sedge	<i>Carex echinata</i>	R

Common Name	Latin Name	Frequency (DAFOR)
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	O
Tormentil	<i>Potentilla erecta</i>	R
Tufted hair-grass	<i>Deschampsia caespitosa</i>	A
White clover	<i>Trifolium repens</i>	O
Yarrow	<i>Achillea millefolium</i>	R
Yorkshire-fog	<i>Holcus lanatus</i>	F
B4 – Improved grassland		
Creeping thistle	<i>Cirsium arvense</i>	R
Perennial rye-grass	<i>Lolium perenne</i>	D
Soft rush	<i>Juncus effusus</i>	R
Timothy	<i>Phleum pratense</i>	O
White clover	<i>Trifolium repens</i>	R
Yorkshire-fog	<i>Holcus lanatus</i>	R
D1.1 – Acidic dry dwarf shrub heath		
Bell heather	<i>Erica cinerea</i>	R
Bilberry	<i>Vaccinium myrtillus</i>	D
Bracken	<i>Pteridium aquifolium</i>	O
Deergrass	<i>Trichophorum germanicum</i>	O
Dwarf gorse	<i>Ulex minor</i>	D
Foxglove	<i>Digitalis purpurea</i>	R
Hard fern	<i>Blechnum spicant</i>	R
Heath bedstraw	<i>Galium saxatile</i>	O
Heather	<i>Calluna vulgaris</i>	R
Sharp-flowered rush	<i>Juncus acutiflorus</i>	R
Sheep's fescue [agg.]	<i>Festuca ovina agg.</i>	O
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	R
Tormentil	<i>Potentilla erecta</i>	R

Common Name	Latin Name	Frequency (DAFOR)
Western gorse	<i>Ulex gallii</i>	O
A2.1 – Dense/continuous scrub		
Hawthorn	<i>Crataegus monogyna</i>	A
Scots pine	<i>Pinus sylvestris</i>	F
Willow species	<i>Salix spp.</i>	F
G2 – Running water		
Bog pondweed	<i>Potamogeton polygonifolius</i>	R
Common yellow sedge	<i>Carex demissa</i>	R
Creeping forget-me-not	<i>Myosotis secunda</i>	R
Greater spearwort	<i>Ranunculus lingua</i>	R
Marsh St. John's-wort	<i>Hypericum elodes</i>	R
Marsh violet	<i>Viola palustris</i>	R
Navelwort	<i>Umbilicus rupestris</i>	R
Ragged robin	<i>Silene flos-cuculi</i>	R
Shoreweed	<i>Littorella uniflora</i>	LF
Water-milfoil sp.	<i>Myriophyllum sp.</i>	LD
Water Starwort sp.	<i>Callitriche sp.</i>	R
A1.2 – Coniferous woodland		
Ash	<i>Fraxinus excelsior</i>	R
Hawthorn	<i>Crataegus monogyna</i>	R
Scot's pine	<i>Pinus sylvestris</i>	D
Sycamore	<i>Acer pseudoplatanus</i>	R

Annex 4

TARGET NOTES

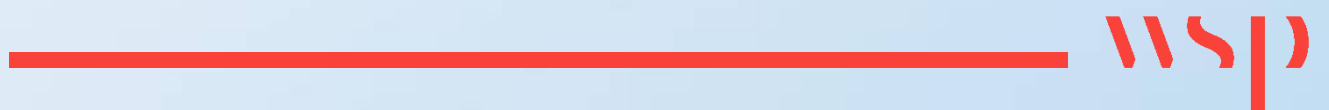


Table 0-1 – Target Notes

Target Note	Target Note Description
TN1	Area of semi-improved acid grassland fenced off and protected from sheep grazing. Sward height here was taller (up to 40 cm), with increased structural diversity and more dead plant litter.
TN2	Common frog <i>Rana temporaria</i> found in marshy grassland habitat near the centre of the Site.
TN3	Scattered gorse <i>Ulex europaeus</i> scrub, not large enough to be mapped, over acid grassland.
TN4	Scattered gorse <i>Ulex europaeus</i> scrub, not large enough to be mapped, over acid grassland.
TN5	Scattered bilberry <i>Vaccinium myrtillus</i> , not large enough to be mapped, over acid grassland.
TN6	Piles of rocks suitable for reptiles. Each pile was approximately 1 m high.
TN7	Scattered bracken <i>Pteridium aquilinum</i> , not large enough to be mapped, over acid grassland.
TN8	Scattered gorse <i>Ulex europaeus</i> scrub, not large enough to be mapped, over acid grassland. Gorse grows along fence line and in the south-west corner of the field, becoming increasingly sparse eastwards.
TN9	Pond 1. A pond on the edge of an infrequently used track, with little shade and a slow-flowing stream to the east flowing into the pond.
TN10	Pond 2. A man-made pond in a sheep-grazed field.
TN11	Scattered rowan <i>Sorbus aucuparia</i> and hawthorn <i>Crataegus monogyna</i> trees within bracken.
TN12	Linear strip of increased rush presence, possibly following a very shallow ditch or subsurface stream, but dry at the time of survey.
TN13	Agricultural shed located within the Site, with a corrugated metal roof and walls. The shed was single pitched, with an open front and open windows on the roof. May have potential to support roosting bats and nesting birds.
TN14	Residential building constructed of stone with multi-pitched tile roof.
TN15	Patch of purple moor-grass <i>Molinia caerulea</i> , too small to be mapped, within acid grassland.
TN16	Scattered bracken, not large enough to be mapped, over acid grassland.
TN17	Area of bracken, not large enough to be mapped, adjacent to rock outcrop.
TN18	Scattered bracken, not large enough to be mapped, over acid grassland.
TN19	Rock outcrop, not large enough to be mapped.

TN20	Common frog recorded in stream. Stream hosted numerous invertebrates, including dragonfly and damselfly species.
TN21	Area of scattered broadleaved trees, mostly comprising hawthorn and willow species <i>Salix sp.</i>
TN22	Area of scattered larch <i>Larix sp.</i> trees.
TN23	Residential property. It was not possible to access the property to determine its suitability to support protected and/or notable species.
TN24	Piles of rocks and piles of logs suitable to support reptile and amphibian species.
TN25	A rock outcrop too small to map, with a 5 m tall face oriented to the south.
TN26	Two brown hares <i>Lepus europaeus</i> found to the west of Pond 1, outside of the Site.
TN27	Two curlew <i>Numenius arquata</i> observed flying overhead.
TN28	Agricultural shed located within the Site, with a corrugated metal roof and walls. The shed was single pitched, with an open front and open windows on the roof. May have potential to support roosting bats and nesting birds.

Annex 5

PHOTOS

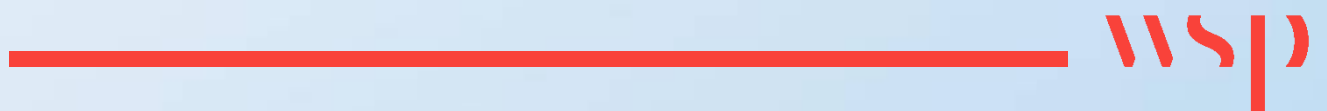


Table 0-1 – Photos of Target Notes

	
Photo 1 – TN4 – Scattered gorse scrub <i>Ulex europaeus</i>.	Photo 2 – TN5 – Scattered bilberry <i>Vaccinium myrtillus</i>.
	
Photo 3 – TN6 – Rock piles suitable to support reptile species.	Photo 4 – TN9 – Pond 1.
	

Photo 5 – TN10 – Pond 2. 	Photo 6 – TN21 – Scattered broadleaved trees. 
Photo 7 – TN24 – Piles of rocks and logs suitable to support reptile and amphibian species.	Photo 9 – TN28 – An agricultural shed.a 5 m tall face.

Table 0-2 - Photos of Phase 1 Habitats within the Site

	
Photo 10 – B5 – Marsh/marshy grassland	Photo 11 – B1.2 – Semi-improved acid grassland
	

Photo 12 – C1 - Bracken 	Photo 13 – B2.2 – Semi-improved neutral grassland 
Photo 14 – B2.2 – Semi-improved neutral grassland 	Photo 15 – B4 – Improved grassland 
Photo 16 – D1.1 – Acidic dry dwarf shrub heath 	Photo 17 – J2.6 – Dry ditch 
Photo 18 – G2 – Running water	Photo 19 – I1.1 – Inland cliff



Photo 20 – A2.1 – Dense/continuous scrub



Photo 21 – A1.2 – Coniferous woodland

Annex 6

HSI RESULTS

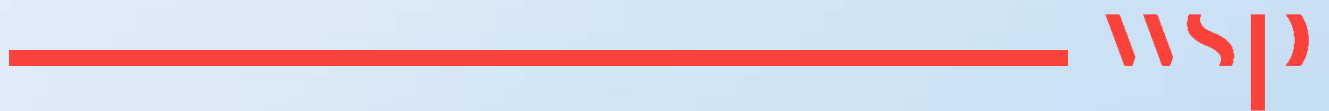


Table 0-1 – Habitat Suitability Index (HSI) results

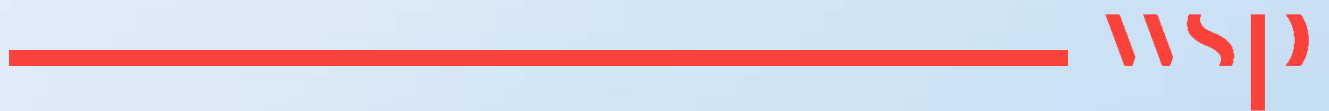
Habitat Suitability Index (HSI)	Pond 1	Pond 2	Pond 4
Notes	Pond on the edge of a frequently used track. Some limited vegetation available for great crested newt <i>Triturus cristatus</i> egg-laying. Sheep grazing in field to south. Stream inflow to the east, with a very low flow. Very little shade.	Man-made pond, which appears to have been created relatively recently. High abundance of invertebrates present. Some vegetation available for egg-laying great crested newt on field perimeter, but surrounding habitats are sheep-grazed.	Llyn Mawr, part of the Llyn Mawr SSSI. A mesotrophic shallow lake that supports waterfowl, including fish-eating species. Vegetation for egg-laying present around pond border. Very little shade.
Location	Zone B	Zone B	Zone B
Pond area (m ²)	175	175	1200
Pond drying	Never dries	Rarely dries	Never dries
Water quality	Good	Good	Good
Shade	0-60%	0-60%	0-60%
Fowl	Minor	Absent	Major
Fish	Minor	Possible	Minor
Ponds within a 1 km radius	4	0	2
Terrestrial habitat	Moderate	Moderate	Moderate
Macrophytes	<1%	1-5%	<1%



HSI score	0.5892	0.5545	0.4187
Habitat suitability	Below average	Below average	Poor

Annex 7

UKHAB HABITAT MAP



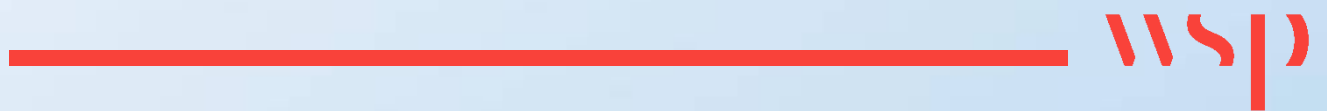


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Annex 5A.2

LEGISLATION AND NATIONAL POLICY CONTEXT



LEGISLATION AND NATIONAL POLICY CONTEXT

This appendix provides an overview and context of the below legislation and national policy and guidance, as applies in England. Further information regarding the legislation and national policy and guidance listed below can be found on the UK government website.

Legislation:

- The Wildlife and Countryside Act 1981 (as amended) (the “WCA”);
- The Invasive Alien Species (Enforcement and Permitting) Order 2019;
- Countryside and Rights of Way Act 2000 (the “CRoW Act”);
- The Conservation of Habitats and Species Regulations 2017 (as amended) (the “Habitats Regulations”);
- Environment Act 2021;
- The Natural Environment and Rural Communities (NERC) Act 2006 (as amended);
- The National Parks and Access to the Countryside Act 1949;
- The Protection of Badgers Act 1992;
- The Hedgerows Regulations 1997;
- The Wild Mammals (Protection) Act 1996;

National policy and guidance:

- The National Planning Policy Framework (NPPF) 2023;
- National planning policy guidance;
- Environmental Improvement Plan 2023;
- UK Post-2010 Biodiversity Framework (2011-2020); and
- UK Biodiversity Action Plans.

Annex 5A.3

UPDATED DESK STUDY RESULTS

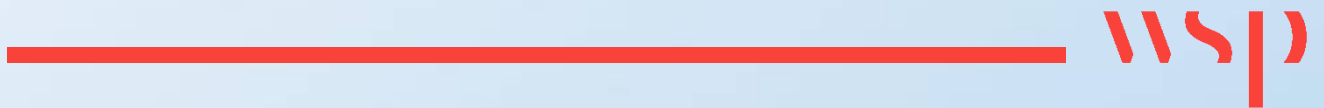


Table B-1 – Records of mammal species within 1 km of the Combined Site

Common name	Latin name	Number of records within 1 km	Conservation Status ²⁴	S7 Priority Species Status
Brown hare	<i>Lepus europaeus</i>	9	S.7, LBAP	No change
Eurasian badger	<i>Meles meles</i>	1	BA, LBAP	No change
Eurasian otter	<i>Lutra lutra</i>	1	EPS, WCA5, S.7	No change
Eurasian water-shrew	<i>Neomys fodiens</i>	1	LBAP	No change
Weasel	<i>Mustela nivalis</i>	1	LBAP	No change
Hedgehog	<i>Erinaceus europaeus</i>	1	S.7, LBAP	No change

Table B-2 – Records of bat species within 10 km of the Combined Site

Common name	Latin name	Number of records within 10 km	Conservation Status	S7 Priority Species Status
Brown long-eared bat	<i>Plecotus auritus</i>	12	EPS, WCA5, S.7, LBAP	No change
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	35	EPS, WCA5, S.7, LBAP	No change

²⁴ Listed on the Local Biodiversity Action Plan (LBAP), Protected by the Badger Protection Act 1992 (BA), A European Protected Species (EPS), Protected under Schedule 1.1/1.2/5/8 of the Wildlife and Countryside Act 1981 (WCA1.1/1.2/5/8), controlled under Schedule 9 of the WCA (WCA9).

Common name	Latin name	Number of records within 10 km	Conservation Status	S7 Priority Species Status
Daubenton's bat	<i>Myotis daubentonii</i>	5	EPS, WCA5, LBAP	No change
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	1	EPS, WCA5, S.7, LBAP	No change
Myotis bat species	<i>Myotis sp.</i>	6	EPS, WCA5	No change
Natterer's bat	<i>Myotis nattereri</i>	5	EPS, WCA5, LBAP	No change
Noctule bat	<i>Nyctalus noctula</i>	7	EPS, WCA5, S.7, LBAP	No change
Pipistrelle bat species	<i>Pipistrellus</i>	1	EPS, WCA5	No change
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	22	EPS, WCA5, S.7, LBAP	No change

Table B-3 – Records of reptile and amphibian species within 1 km of the Combined Site

Common name	Latin name	Number of records within 1 km	Conservation Status	S7 Priority Species Status
Common frog	<i>Rana temporaria</i>	2	WCA5, LBAP	No change
Common lizard	<i>Zootoca vivipara</i>	2	WCA5, S.7, LBAP	No change
Common toad	<i>Bufo bufo</i>	2	WCA5, S.7, LBAP	No change

Table B-4 – Records of bird species within 1 km of the Combined Site

Common name	Latin name	Number of records within 1 km	Conservation Status	S7 Priority Species Status
Barn owl	<i>Tyto alba</i>	6	WCA1.1, WCA9, LBAP	No change
Black-headed gull	<i>Chroicocephalus ridibundus</i>	4	S.7	No change
Blue tit	<i>Cyanistes caeruleus</i>	2	LBAP	No change
Buzzard	<i>Buteo buteo</i>	3	LBAP	No change
Cormorant	<i>Phalacrocorax carbo</i>	1	LBAP	No change
Cuckoo	<i>Cuculus canorus</i>	4	S.7	No change
Curlew	<i>Numenius arquata</i>	3	S.7, LBAP	No change
Dunnock	<i>Prunella modularis</i>	2	S.7, LBAP	No change
Fieldfare	<i>Turdus pilaris</i>	1	S.7, WCA1.1, LBAP	Added
Garden warbler	<i>Sylvia borin</i>	2	S.7, LBAP	Added
Goldeneye	<i>Bucephala clangula</i>	3	S.7, WCA1.2, LBAP	Added
Goldfinch	<i>Carduelis carduelis</i>	1	LBAP	No change
Goosander	<i>Mergus merganser</i>	3	LBAP	No change
Grasshopper warbler	<i>Locustella naevia</i>	1	S.7, LBAP	No change
Great spotted woodpecker	<i>Dendrocopos major</i>	1	LBAP	No change

Common name	Latin name	Number of records within 1 km	Conservation Status	S7 Priority Species Status
Great tit	<i>Parus major</i>	2	LBAP	No change
Grey wagtail	<i>Motacilla cinerea</i>	1	LBAP	Added
Herring gull	<i>Larus argentatus</i>	2	S.7, LBAP	No change
Hoopoe	<i>Upupa epops</i>	1	WCA1.1	No change
House martin	<i>Delichon urbicum</i>	2	LBAP	Added
House sparrow	<i>Passer domesticus</i>	2	S.7, LBAP	No change
Kestrel	<i>Falco tinnunculus</i>	5	S.7, LBAP	No change
Lesser black-backed gull	<i>Larus fuscus</i>	1	LBAP	No change
Linnet	<i>Linaria cannabina</i>	4	S.7, LBAP	No change
Pied wagtail	<i>Motacilla alba</i>	5	LBAP	No change
Red kite	<i>Milvus milvus</i>	5	WCA1.1, WCA9, LBAP	No change
Redstart	<i>Phoenicurus phoenicurus</i>	1	LBAP	No change
Reed Bunting	<i>Emberiza schoeniclus</i>	3	LBAP	Removed
Reed warbler	<i>Acrocephalus scirpaceus</i>	1	LBAP	No change
Short-eared owl	<i>Asio flammeus</i>	2	S.7, LBAP	Added
Skylark	<i>Alauda arvensis</i>	3	S.7, LBAP	No change

Common name	Latin name	Number of records within 1 km	Conservation Status	S7 Priority Species Status
Snipe	<i>Gallinago gallinago</i>	1	S.7, LBAP	Added
Song thrush	<i>Turdus philomelos</i>	1	S.7, LBAP	No change
Stonechat	<i>Saxicola rubicola</i>	3	LBAP	No change
Swallow	<i>Hirundo rustica</i>	2	LBAP	No change
Tree sparrow	<i>Passer montanus</i>	1	S.7, LBAP	No change
Tufted duck	<i>Aythya fuligula</i>	5	LBAP	No change
Wheatear	<i>Oenanthe oenanthe</i>	2	S.7, LBAP	Added
Whinchat	<i>Saxicola rubetra</i>	3	S.7, LBAP	Added
Whitethroat	<i>Curruca communis</i>	1	S.7, LBAP	Added
Yellowhammer	<i>Emberiza citrinella</i>	1	S.7, LBAP	No change

Table B-5 – Records of invertebrate species within 1 km of the Combined Site

Common name	Latin name	Number of records within 1 km	Conservation Status	S7 Priority Species Status
Autumnal rustic	<i>Eugnorisma glareosa</i>	1	-	Removed
Broom moth	<i>Ceramica pisi</i>	1	-	Removed
Dusky brocade	<i>Apamea remissa</i>	1	-	Removed
Feathered gothic	<i>Tholera decimalis</i>	1	-	Removed

Common name	Latin name	Number of records within 1 km	Conservation Status	S7 Priority Species Status
Galium carpet	<i>Epirrhoe galiata</i>	1	-	Removed
Garden tiger	<i>Arctia caja</i>	2	-	Removed
Ghost moth	<i>Hepialus humuli</i>	1	-	Removed
Minor shoulder-knot	<i>Brachylomia viminalis</i>	1	-	Removed
Oblique carpet	<i>Orthonama vittata</i>	1	-	Removed
Shaded broad-bar	<i>Scotopteryx chenopodiata</i>	1	-	Removed
Small heath	<i>Coenonympha pamphilus</i>	4	S.7	No change
Small pearl-bordered fritillary	<i>Boloria selene</i>	4	S.7, LBAP	No change
Wall	<i>Lasiommata megera</i>	1	S.7	No change

Table B-6 – Records of notable plant species within 1 km of the Combined Site

Common name	Latin name	Number of records within 1 km	Conservation Status	S7 Priority Species Status
Bluebell	<i>Hyacinthoides non-scripta</i>	7	WCA8	No change
Variegated yellow archangel	<i>Lamium galeobdolon subsp. montanum</i>	1	WCA9, INNS	-



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