Brogan Solar Farm

on behalf of Fuse Renewables Ltd.

Ecological Assessment Survey Report

avian ecology

Report Verification and Declaration of Compliance

This report has been prepared with reference to best practice guidelines for Ecological Impact Assessment in the UK and Ireland, as defined by CIEEM (2022) and is provided in accordance with the provisions of British Standard 42020:2013 Biodiversity: Code of practice for planning and development and BS 8683:2021 Process for Designing and Implementing Biodiversity Net Gain - Specification.

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This report has been prepared in accordance with the terms and conditions of our appointment. Avian Ecology Ltd. (6839201) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

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1 INTRODUCTION

1.1 Background

1.1.1 Avian Ecology Limited (AEL) was commissioned by Pegasus Planning Group, on behalf of their client Fuse Renewables Limited to undertake an Ecological Assessment in relation to a proposed solar farm and associated infrastructure (the 'Proposed Development') on land located to the east of the B4393 near Llanfyllin, North Wales, SY22 5LQ, at central Ordnance Survey (OS) grid reference: SJ 17662 18915 (hereafter referred to as the 'Site'), as illustrated on **Figure 1: Site Location Plan**.

1.1.2 AEL undertook an extended habitat survey, breeding bird surveys, bat activity surveys and great crested newt (GCN) survey with regards to the Proposed Development at the Site. This report is supported by the following appendices:

- Appendix 2: Breeding Bird Survey Report;
- Appendix 3: Bat Activity Report;
- Appendix 4: Great Crested Newt Survey Report;
- Appendix 5: Net Benefit for Biodiversity Statement;
- Appendix 6: Biodiversity Management Plan; and,
- Appendix 7: Report to Inform a Habitat Regulations Assessment.

1.1.3 The objectives of the assessment were to:

- Provide baseline information on the current habitats and ecological features both within the Site and in the immediately surrounding area;
- Identify the proximity of any designated sites for nature conservation interest and provide an assessment of any potential effects the Proposed Development may have on these;
- Identify the presence or potential presence of any protected species or habitats and provide an assessment of any potential effects the Proposed Development may have on these; and,
- Provide recommendations for further pre-construction checks and/or mitigation measures, if required as well as providing an outline of proposed habitat enhancements.

1.1.4 The assessment has been informed by desk-based review of relevant ecological information and an extended habitat survey, breeding bird surveys, bat activity surveys, GCN survey and refers to relevant legislation, planning policy and guidance as appropriate.

1.1.5 Consideration has been given to the potential presence of rare, protected, or notable habitats and species, and the location of nearby features, including designated sites for nature conservation. Mitigation and enhancement measures are also proposed, where required.

1.1.6 Throughout this report, common names for species are favoured over scientific names unless there is potential for confusion, in which case scientific names are also presented.

1.1.7 This report should be read in conjunction with the *Detailed Landscape Proposals* (Drawing Number: P25-0182_EN_001; Rev: C) produced by Pegasus Group, as well as the *Proposed Layout Plan* (Drawing Number: BGS.LYT.DEV.06; Rev: 06) produced by Fuse Energy Ltd. These plans respectively illustrate the Proposed Development's landscaping and layout design.

1.2 Site description

1.2.1 The Proposed Development is predominantly located within a rural landscape, on agricultural land located to the east of the B493 and located *c.* 2.5 km east of the town of Llanfyllin in North Wales. The Site is *c.* 12.1 hectares (ha) in extent.

1.3 Proposed development

1.3.1 The Proposed Development is comprised of an installation of a 5 MW solar farm and 2.6m high containerised substation, together with associated infrastructure.

1.4 Quality assurance and environmental management

1.4.1 This report has been subject to AELs internal quality assurance checks in line with ISO9001:2015.

1.4.2 All surveys and assessments were undertaken by suitably experienced ecologists as per the Chartered Institute of Ecology and Environmental Management (CIEEM) competency framework (CIEEM, 2024[1]) and have been undertaken with reference to the recommendations given in BS 42020:2013 Biodiversity: Code of practice for planning and development (British Standards Institute, 2013[2]).

1.4.3 As per the advice note from CIEEM (2019[3]) On the Lifespan of Ecological Reports & Surveys; the findings presented in this report are considered valid for up to 18 months from the date of survey, providing there is no significant change to the baseline conditions at the Site.

1.4.4 Following this time period, the survey data should be reviewed and, if appropriate, updated to ensure baseline conditions remain valid.

1.5 Legislative and planning framework

Legislation

1.5.1 Reference has been made to the following key pieces of legislation listed in **Table 1.1.**

Table 1.1: Key legislation

International
• Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (hereafter referred to as the 'the Ramsar Convention');

[1] Chartered Institute of Ecology and Environmental Management (2024). *Competency Framework.* Competency-Framework-2024-V7-Web.pdf – Accessed January 2026.
[2] British Standards Institute (2013). *BS 42020:2013 Biodiversity: Code of Practice for Planning and Development.*
[3] Chartered Institute of Ecology and Environmental Management (2019). *Advice Note on the Lifespan of Ecological Reports and Surveys* - Advice-Note.pdf – Accessed January 2026.

• Convention on the Conservation of European Wildlife and Natural Habitats 1979 (hereafter referred to as the 'the Bern Convention'; and, • UNESCO convention on the protection of the World Cultural and Natural Heritage (1972).
National
• Countryside and Rights of Way Act 2000; • Hedgerow Regulations 1997; • Infrastructure Act 2015; • Natural Environment and Rural Communities (NERC) Act (2006); • Protection of Badgers Act 1992; • The 'Conservation of Habitats and Species Regulations 2017 (as amended); • The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019; • The Environment (Wales) Act 2016; • The Invasive Alien Species (Enforcement and Permitting) Order 2019; • The Town and Country Planning Act 1990; • The Wildlife and Countryside Act 1981 (as amended); and, • Wild Mammals (Protection) Act 1996.

1.5.2 The Conservation of Habitats and Species Regulations 2017 (as amended) remains in place following the United Kingdom's (UK's) withdrawal from the European Union (EU) with only relatively minor changes coming into force on 31st December 2020, with the 2017 regulations being transposed into national (England and Wales) legislation via the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019. They are hereafter referred to as the 'Habitats Regulations'.

Policy

1.5.3 Reference has been made to the following key pieces of policy listed in **Table 1.2**.

Table 1.2: Key policy

National
• Future Wales: The National Plan 2040 (Welsh Government, 2021); • Planning Policy Wales (Edition 12) (Welsh Government Llwodraeth Cymru, 2024) – Chapter 6 Distinctive and Natural Places (Welsh Government (2009); • Biodiversity deep dive: recommendations (Welsh Government, 2022); • Natural Resources Wales (2020) State of Natural Resources Report (SoNaRR) Assessment of the sustainable management of natural resources; • National Planning Policy Framework (NPPF, 2024); and, • The United Kingdom Biodiversity Action Plan (UK BAP).
Local
• Powys Local Development Plan (2011 – 2026)[4]; and,

[4] Powys Local Plan - Accessed January 2026.

- The Powys Nature Recovery Action Plan (2022 – 2032)[5].

1.5.4 The 'UK Post-2010 Biodiversity Framework' succeeds the UK Biodiversity Action Plan (UK BAP) and 'Conserving Biodiversity – the UK Approach'. The lists of priority species and habitats agreed under UK BAP still form the basis of much biodiversity work and are therefore considered within this report in the context of the objectives of the Biodiversity Framework. BAPs identify habitats and species of nature conservation priority on a UK (UK BAP) and Local (LBAP) scale.

[5] The Powys Nature Recovery Action Plan (2022 – 2032) - Accessed January 2026.

2 METHODOLOGY

2.1 Desk study

2.1.1 A desk study was undertaken to identify existing information on the presence of designated sites for nature conservation and on protected and notable species and habitats within proximity to the Site as follows:

- Statutory designated sites for nature conservation within 5 km of the Site. This extends to 10 km for internationally protected sites, 20 km for internationally protected sites with migratory geese and swan qualifying features, and 30 km for internationally protected sites with mobile bat qualifying species;
- Non-statutory designated sites for nature conservation within 2 km of the Site; and,
- Existing records of priority habitats, protected and notable species (for the last 10 years from date of search; 2016-2025), within 2 km of the Site.

2.1.2 The following key sources were consulted:

- The Multi Agency Geographic Information for the Countryside (MAGIC[6]) website;
- Joint Nature Conservation Committee (JNCC[7]);
- DataMap-Wales[8];
- Natural Resources Wales (NRW) – Find Protected Area of Land and Sea[9]; and,
- Biodiversity Information Service for Powys & Brecon Beacons National Park (BIS)[10].

2.1.3 Reference was also made to OS maps of the wider area and online aerial images (www.google.co.uk/maps) in order to determine any features of nature conservation interest in the wider area, including potential ponds and watercourses.

2.2 Field surveys

Extended habitat survey

2.2.1 An extended habitat survey was undertaken on 8th May 2025 by a suitably qualified and experienced ecologist from AEL. The survey followed UK industry standard UK Habitat (UKHAB) Methodology V2.0[11] with reference to the CIEEM, guidance (2017)[12], and included condition assessments of the habitats present.

[6] https://magic.defra.gov.uk/MagicMap.aspx – Accessed January 2026.
[7] Advisor to Government on Nature Conservation | JNCC – Accessed January 2026.
[8] Home | DataMapWales – Accessed January 2026.
[9] Natural Resources Wales / Find protected areas of land and sea – Accessed January 2026.
[10] https://www.bis.org.uk/ – Accessed January 2026.
[11] http://www.ukhab.org – Accessed January 2026.
[12] CIEEM. (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

2.2.2 The survey covered the Site, as presented on **Figure 1**, and included a 30 m buffer for signs of notable species, such as badger, where access was available.

2.2.3 Habitats were mapped and described using UKHAB Classifications. The survey was extended to include the additional recording of specific features indicating the presence, or likely presence, of protected species, invasive species and other species of conservation significance, which were recorded using a series of 'target notes' (TNs).

Breeding bird surveys

2.2.4 Breeding bird surveys were completed at the Site. The methodology of the survey is summarised below, with full details available within the Breeding Bird Survey Report, presented within **Appendix 2.**

2.2.5 Surveys covered the Site and a 100 m buffer (the Breeding Bird Survey Area, (hereafter the BBS Area)) as presented in **Figure 2: Breeding Bird Survey Plan**. A total of six survey visits were undertaken between April and July 2025, comprising of five dawn and one dusk visit survey, spaced at least ten days apart. Surveys followed 'Breeding Bird Census' (BBS) methodology detailed in Bird Survey Guidelines (2025[13]).

2.2.6 All surveys were undertaken by an experienced ornithologist. During each survey visit, all bird observations were recorded / annotated on suitably scaled field maps using behavioural notations (such as singing, carrying food, active nest) as per the British Trust for Ornithology (BTO) species and behavioural codes.

2.2.7 The locations of approximate bird territories were determined using distribution points on a map to identify and isolate areas within which birds consistently display breeding behaviours which broadly follow that of the Common Breeding Bird Census methodology (within Gilbert *et al.,* 1998[14]).

2.2.8 Particular attention was given to those species most likely to be adversely affected by the Proposed Development, notably ground-nesting species.

2.2.9 Records of birds utilising the Site (e.g. corvids feeding in fields) were also recorded to account for species which may nest and (or) breed outside of the Site but use the area for vital foraging purposes which contributes to their overall breeding success. Birds flying over the Site were also recorded.

Bat activity surveys

2.2.10 Bat activity surveys comprising habitat suitability assessment, Night-time Bat Walkovers (NBW), automated bat activity surveys and tree assessments were undertaken at the Site. The methodology of the surveys are summarised below, with full details available within the Bat Activity Report, presented within **Appendix 3.**

<u>Habitat suitability assessment</u>

[13] Bird Survey & Assessment Steering Group. (2025). Bird Survey Guidelines for assessing ecological impacts https://birdsurveyguidelines.org/

[14] Gilbert, G., Gibbons, D.W & Evans, J. (1998) *Bird monitoring methods. A manual of techniques for key UK species*. RSPB, Sandy.

2.2.11 A habitat suitability assessment, using data gathered during the UKHAB Classification Survey and aerial imagery, was undertaken in reference to criteria detailed in Table 4.1 of Bat Conservation Trust (BCT) Good Practice Guidance (Collins, 2023[15]), which provided an appraisal of the potential value of habitats located within the Site relative to foraging, commuting and roosting potential.

NBW

2.2.12 A total of three walked transects were undertaken at the Site, with one transect completed during each season of the bat active season, spring (April/May), summer (June/July/August) and autumn (September/October). The transects covered the Site, as presented in **Figure 3: Bat Activity Survey Plan.** The surveys were undertaken in line with BCT guidelines (Collins, 2023).

Automated static detector surveys

2.2.13 A total of two automated static bat detectors, referred to as Monitoring Stations (MS), were deployed at the Site for a minimum of five consecutive nights each month during the bat active season (April – October, inclusive), the locations of the bat detectors are shown on **Figure 3**. The bat detectors were situated within habitats on-Site considered suitable for use by foraging and commuting bats.

2.2.14 The surveys were undertaken in line with BCT guidelines (Collins, 2023). Static data collected was analysed by a suitably qualified and experienced ecologist using Kaleidoscope software.

Tree assessment

2.2.15 Individual trees were identified on-Site during the initial extended habitat survey. Trees were classified as to their suitability to support roosting bats, as detailed in Table 4.2 of BCT guidance (Collins, 2023):

- **NONE**: Either no Potential Roosting Features (PRF's) in the tree or highly unlikely to be any;
- **FAR**: Further assessment required to establish if PRF's are present in the tree; and,
- **PRF**: A tree with at least one PRF present.

Great crested newts

2.2.16 GCN surveys comprising Habitat Suitability Index (HSI) assessments and environmental DNA (eDNA) surveys were undertaken at the Site. The methodology of the surveys are summarised below, with full details available within the GCN Survey Report, presented within **Appendix 4.**

2.2.17 Two ponds were found to be located within 250 m of the Site. Both ponds were subjected to HSI assessments as developed by Oldham *et al.* (2000[16]) and as detailed within ARG UK guidance (ARG UK, 2010[17]). These ponds were also subject to eDNA surveys to determine the presence or likely absence of GCN at the Site. The location of the ponds is shown on **Figure 4: Pond Location Plan.**

[15] Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London.
[16] Oldham R.S., Keeble J., Swan M.J.S. and Jeffcote M. (2000) Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus). Herpetological Journal, 10(4), pp. 143-155.
[17] ARG UK (2010) ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. Amphibian and Reptile Groups of the United Kingdom.

2.3 Limitations

Extended habitat survey

2.3.1 An extended habitat survey does not constitute a detailed botanical survey or faunal species list or provide a full protected species survey but, enables competent ecologists to ascertain an understanding of the ecology of the site in order to:

- Broadly identify the nature conservation value of a site and assess the significance of any potential impacts on habitat/species recorded; and/or,
- Confirm the need and extent of any additional specific ecological surveys that are required to identify the true nature conservation value of a site (if any).

2.3.2 The survey visit was undertaken in May and therefore within the optimal period for botanical surveys (approximately April to September).

Breeding bird survey

2.3.3 No significant limitations were identified from the breeding bird surveys.

Bat activity surveys

2.3.4 No significant limitations were identified from the bat activity surveys, however details on minor limitations identified are presented Section 2.5 of the Bat Activity Report, presented within **Appendix 3.**

GCN surveys

2.3.5 No significant limitations were identified from the GCN surveys.

3 BASELINE

3.1 Designated sites for nature conservation

Statutory designated sites

3.1.1 A total of four national statutory designated sites are located within 5 km of the Site, the closest being Bryngwyn Hall Stables and Coach House Site of Special Scientific Interest (SSSI). This SSSI is designated for lesser horseshoe bats and is located *c*. 480 m south.

3.1.2 Three international designated sites are located within 10 km of the Site, with closest being Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy Special Area of Conservation (SAC). This SAC spatially overlaps with Bryngwyn Hall Stables and Coach House SSSI and is designated for lesser horseshoe bats.

3.1.3 No internationally designated sites with migratory geese and swan qualifying features were identified within 20 km of the Site. No additional internationally designated sites designated bat qualifying interest were identified within 30 km of the Site.

3.1.4 Designated sites are as presented in **Table 3.1: Statutory designated sites** and illustrated on **Figure 5: Statutory Designated Sites.**

Table 3.1: Statutory designated sites *(SAC: Special Area of Conservation, SSSI: Site of Scientific Interest)*

Site Name	Distance and Direction from Site	Reason for Designation
Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy SAC	*c.* 480 m south *c.* 3.4 km south *c.* 4.2 km north *c.* 4. 65 km northwest *c.* 14.3 km northwest	The site(s) are designated for lesser horseshoe bats. This area in central Wales contains a good mixture of lesser horseshoe bat maternity and hibernation sites, thought to support about 4% of the UK species population, though counts in hibernation sites suggest this may be an underestimate.
Bryngwyn Hall Stables and Coach House SSSI	*c.* 480 m south	The site is comprised of a disused stable block adjacent to Brygwyn Hall. Part of the roof and upper floor of the stable block form an important breeding site for lesser horseshoe bats. Around 200 bats are known to breed at the site.
Allt y Main Mine SSSI	*c.* 3.4 km south	A small disused lead mine level, extending for about 80 m into a well-wooded hillside, noted as an important winter roost for lesser horseshoe bats. The mine is known to have been occupied by bats for a number of years, with counts of at least 130 individuals previously recorded in December 1988, making this one of the most important hibernation colonies in Wales. There is also evidence of bats using the mine during summer and autumn.
Hendre, Llagedwyn SSSI	*c.* 4.2 km north	The site is of interest for lesser horseshoe bats. The site comprises a small cottage, which is a confirmed bat roost, with nearby green lanes providing vital foraging and commuting routes. Surrounding valley habitat provides excellent bat habitat with the presence of traditional farm buildings and small disused mines.

Site Name	Distance and Direction from Site	Reason for Designation
		The site shelters the tenth (1993 records) largest breeding roost of lesser horseshoe bats in Wales, and the second largest in Clwyd, with annual counts in excess of 100 adults. Individuals breeding here are known to hibernate in the nearby Gartherye mine. Other species including common pipistrelle and brown long-eared bat are known to use the cottage. Small numbers of all three species are known to hibernate within the cottage.
Garth-eryr SSSI	*c.* 4. 65 km northwest	The site comprises a disused phosphate mine on a northeast facing scarp, overlooking the Afon Tanat and situated on the edge of ancient woodland. The mine is one of the most important hibernation sites for bats in Britian for lesser horseshoe bats, with over 200 bats present in late winter. Three other species of bats have also been recorded: brown long-eared bat, Natterer's bat and Daubenton's bat.
Montgomery Canal SAC	*c.* 7.45 km east	This is the largest and most extensive population of floating water-plantain in Britain and is a highly significant lowland population.
Granllyn SAC	*c.* 8.25 km southeast	This site is selected due to the presence of GCN. The site supports the largest known population of the species in central Wales.

Non-statutory designated sites

3.1.5 A review of information provided by BIS did not identify any non-statutory designated sites for nature conservation located within 2 km of the Site.

3.2 Priority Habitats

3.2.1 A review of DataMap Wales did not identify any priority habitats located within the Site or surrounding 50 m.

3.2.2 Information provided by BIS identified multiple areas of ancient semi-natural woodland, restored ancient woodland, plantation on ancient woodland and NRW priority area of woodland within 2 km of the Site, with the nearest area identified was located *c.* 200 m from the Site boundary.

3.3 Habitats and Vegetation

3.3.1 This section should be read in conjunction with the UKHAB Plan presented in **Figure 6: UKHAB plan.** A summary of the habitats recorded at the Site is presented in **Table 3.2** below. Photographs are presented in **Appendix 1**.

Table 3.2: UKHAB summary

Habitat Code	Habitat Description	Photograph Number
g4	*Modified grassland* The Site was largely comprised of improved pasture which was freshly cut at the time of the survey. An unmanaged corner of the field was abundant in nettles.	1
w2c.523	*Other coniferous woodland; non-native* A small stand of non-native conifers was present within the southwestern extent of the Site.	2
h2a	*Native hedgerow* Five native hedgerows bound grassland fields at the Site. Hawthorn was the dominant hedgerow species; mature trees were present in some hedgerows, and recent planting was evident within one hedgerow. Species recorded within hedgerows include hawthorn, oak, ash, hazel, sycamore, field maple, elm and blackthorn.	3
h2a5.11	*Species-rich native hedgerow; hedgerow with trees* One hedgerow located along the north and western Site boundary was a classified as a species-rich native hedgerow. The hedgerow supported species including hazel, hawthorn, blackthorn, elm, field maple and mature oak. A broad weedy margin bordered the hedgerow and supported species including nettle, cleavers and hogweed.	4
w1f.33	*Lowland mixed deciduous woodland; line of trees* A short section of mature hazel, willow and ash trees was present along the western boundary at the Site.	5
Individual Tree	Three individual trees were recorded within the Site. All were mature oak trees, and some supported veteran features.	6

3.3.2 Target notes recorded during the extended habitat survey are presented in **Table 3.3** below.

Table 3.3: Target notes

Target Note	Comment	Photograph Number
TN1	Hawthorn sapling planting present, presumably to infill hedgerow gap.	7
TN2	Pile of dead wood – suitable refugia for amphibians and reptiles.	8

3.4 Protected Species Surveys

Breeding bird surveys

3.4.1 A summary of the results of the breeding bird surveys is presented below. Full results are presented within the breeding bird survey report in **Appendix 2.**

3.4.2 The breeding bird assemblage recorded within the BBS Area is considered representative of the locale and the agricultural and field boundary habitats present.

3.4.3 A total of 42 bird species were recorded within the BBS Area, of which 28 were considered to be breeding within the area and 10 of the breeding species are classified as Priority Species.

3.4.4 'Priority Species' comprised Birds of Conservation Concern Wales (BoCCW), Amber and Red List Species (Johnstone *et al.,* 2021[18]), birds listed under Section 7 of the Environment (Wales) Act 2016,[19] and Annex 1[20] / Schedule 1[21] species.

3.4.5 No ground-nesting Priority Species, or Schedule 1 species were recorded breeding within the BBS Area.

3.4.6 Further details of birds recorded as breeding on-Site are presented within the breeding bird survey report.

Bat activity surveys

3.4.7 Broad summaries of the bat activity surveys undertaken at the Site are provided below. For detailed analysis and results see the bat activity survey report in **Appendix 3**.

Habitat suitability assessment

3.4.8 Based on the Site's overall commuting and foraging value, in addition to its potential as a possible roost resource relative to the local landscape, in accordance with Table 4.1 in BCT guidance (Collins, 2023), habitats within the zone of influence (ZoI) were assessed as providing **high** suitability for commuting and foraging bats.

Night-time bat walkovers

3.4.9 NBW undertaken at the Site found that soprano pipistrelle accounted for the highest number of recorded passes over the NBW survey effort.

3.4.10 The Annex II species, lesser horseshoe, was recorded on-Site during the NBW surveys with a total of four passes (1.2% of all passes) recorded.

3.4.11 Seasonally, collective bat activity was highest during the autumn NBW, and lowest during the spring NBW.

3.4.12 A total of six species/genus were collectively recorded across all NBW surveys, across all seasons. A summary of the species recorded, and total number of passes is presented in **Table 3.4**.

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[18] Johnstone, I.G., Hughes, J., Balmer, D.E., Brenchley, A., Facey, R.J., Lindley, P.J., Noble, D.G. & Taylor, R.C. (2022). Birds of Conservation Concern Wales 4: the population status of birds in Wales. *Milvus* 2:1. Available online at https://birdsin.wales/wp-content/uploads/2023/12/Birds_of_Conservation_Concern_Wales_4_corrected_version_December_2023.pdf - Accessed: January 2026.

[19] https://www.gov.wales/sites/default/files/publications/2023-01/list-living-organisms-principal-importance-purpose-maintaining-enhancing-biodiversity-wales.pdf - Accessed: January 2026.

[20] Annex 1 – species listed on Annex 1 of the EC Directive 2009/147/EC of the European Parliament on the conservation of wild birds. https://ec.europa.eu/environment/nature/conservation/wildbirds/threatened/index_en.htm (Accessed: 8th December 2025)

[21] Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). https://www.legislation.gov.uk/ukpga/1981/69/schedule/1 - Accessed: January 2026.

Table 3.4: Summary of collective NBW activity.

Species/Genus	Total number of passes	Percentage of total passes (%)
Common pipistrelle	16	4.82
Soprano pipistrelle	295	88.86
Myotis species	7	2.11
Noctule	7	2.11
Brown long-eared	3	0.90
Lesser horseshoe	4	1.20
NBW Total (Assemblage)	**332**	**100.00%**

3.4.13 Bat activity was typically associated with boundary features at the Site, with higher levels of recordings noted along the central farm track which is lined by mature hedgerows and around large oak trees.

Automated bat activity surveys

3.4.14 A total of nine species of bat were recorded on-Site during, across both MS, the automated bat activity surveys, with soprano pipistrelle being the most frequently recorded species with 22,334 passes (79.39% of all passes) recorded.

3.4.15 The Annex II species, lesser horseshoe, was recorded on-Site with a total of 181 passes (0.64% of all passes) across the survey period. **Table 3.5** details bat species/genus and total number of passes recorded, collectively, across all automated bat activity surveys across all survey months.

Table 3.5: Summary of collective automated bat activity surveys

Species/Genus	Total number of passes	Percentage of total passes (%)
Common pipistrelle	3894	13.84
Soprano pipistrelle	22334	79.39
Noctule	903	3.21
Myotis species	681	2.42
Brown long-eared	111	0.39
Nathusius' pipistrelle	6	0.02
Serotine	13	0.05
Leisler	8	0.03
Lesser horseshoe	181	0.64
Combined assemblage	**28,131**	**100.00**

Tree assessment

3.4.16 A total of three on-Site mature oak trees were classified during the extended habitat survey as having FAR suitability to support roosting bats.

GCN surveys

3.4.17 A summary of the survey results are presented below. Detailed results are presented in the GCN survey report in **Appendix 4.**

3.4.18 Two ponds (P1 and P2) were found to be located within 250 m of the Site. Both ponds were subjected to a HSI assessment and eDNA survey.

3.4.19 The results of the HSI and eDNA surveys are presented in **Table 3.6** below.

Table 3.6: GCN survey summary

Pond Reference	HSI Score	Habitat Suitability	eDNA Result
P1	0.61	Average	Positive
P2	0.68	Average	Positive

3.4.20 The eDNA survey found both ponds to be positive for the presence of GCN, concluding the presence of GCN within proximity of the Site.

3.5 Protected and notable species

3.5.1 Species relevant to the Proposed Development are referenced in the sections below.

Birds

3.5.2 The desk study records returned from BIS included numerous records of bird species within 2 km of the Site within the last 10 years.

3.5.3 A total of 65 species of birds was recorded including barn owl, hobby, brambling, fieldfare and kingfisher. No records were returned within the Site boundary.

3.5.4 As demonstrated by the results of the breeding bird surveys, the Site provides suitable habitat to support a diverse assemblage of birds representative of the locale and the agricultural and field boundary habitats present.

Bats

3.5.5 The desk study records from BIS included two records of bat species within 2 km of the Site within the last 10 years.

3.5.6 Both records relate to lesser horseshoe bat roosts which are distanced *c.* 400 m and *c.* 745 m south of the Site, dated from 2018 and 2020 respectively.

<u>Roosting Bats</u>

3.5.7 Field boundaries and woodlands at and adjacent to the Site, are likely to support trees that have the potential to support roosting bats. This especially applies to areas of semi-natural woodland, buildings and mature trees where present within the local landscape.

Foraging and Commuting Bats

3.5.8 Habitats present including field boundary hedgerows, mature trees and small woodland stands are present within the Site and locality. These provide favourable habitats for foraging and commuting bats.

3.5.9 Overall, the habitats within and adjacent to the Site are considered to most closely fit the description for land of '**high**' suitability for foraging and commuting bats in accordance with BCT guidance (2023).

Badger

3.5.10 The desk study records from BIS did not include any records of badger within 2 km of the Site and within the last 10 years.

3.5.11 No evidence of badger was recorded during the extended habitat survey.

3.5.12 Habitats including woodland, hedgerows and grassland located within the Site provide suitable foraging, commuting and sett creation habitat for badger.

Otter and Water Vole

3.5.13 The desk study records from BIS did not include any records of otter or water vole within 2 km of the Site within the last 10 years.

3.5.14 No water courses are located within the Site. Two water courses are located within proximity to the Site; Afon Cain and The Brogan, which are located *c.* 70 m west and *c.* 50 m south respectively at their closest point to the Site. These may have potential to support otter and water vole.

Hazel Dormouse

3.5.15 The desk study records from BIS did not include any records of hazel dormouse within 2 km of the Site within the last 10 years.

3.5.16 There are small areas of habitat considered suitable to support dormouse within the Site including woodland and hedgerows. However, there is a lack of connectivity between suitable habitats on-Site and suitable habitat within the wider landscape. Due to the poor areas of connectivity, and lack of any recent records, it is considered unlikely that hazel dormouse is present at the Site.

Amphibians

3.5.17 The desk study records from BIS did not include any records of amphibians within 2 km of the Site within the last 10 years.

3.5.18 Two ponds (P1 and P2) were located within 250 m of the Site, as illustrated on **Figure 4**.

3.5.19 eDNA surveys undertaken at the Site found both ponds to be positive for the presence of GCN.

3.5.20 Habitats on-Site including grassland, hedgerows and woodland provide suitable habitat for foraging and sheltering GCN. During the extended habitat survey a pile of deadwood was recorded on-Site as suitable refugia for amphibians (TN2).

3.5.21 The majority of the Site is comprised of modified arable grassland, considered to be of low ecological value for amphibians.

Reptiles

3.5.22 The desk study records from BIS did not include any records of reptiles within 2 km of the Site within the last 10 years.

3.5.23 Habitats on-Site including grassland, hedgerows and woodland provide suitable habitat for foraging and sheltering reptiles. During the extended habitat survey a pile of deadwood was recorded on-Site as suitable refugia for reptiles (TN2).

3.5.24 The majority of the Site is comprised of modified grassland, considered to be of low ecological value for reptiles.

Other Protected and Notable Species

3.5.25 The desk study records from BIS included multiple records of other protected and notable species including brown hare, hedgehog, bluebell and white-lesser hairstreak. No records were returned within the Site boundary.

3.5.26 Habitats at the Site are considered suitable to support notable species including brown hare and hedgehog; but are not considered suitable to support significant assemblages of invertebrates due to the low level of floristic structure and diversity.

3.5.27 No notable or protected flora species were recorded at the Site during the extended habitat survey.

3.6 Invasive Non-Native Species

3.6.1 The desk study records from BIS included records of four species listed on Schedule 9 of the Wildlife and Countryside Act, located within 2 km of the Site within the last 10 years. Species listed are Canada goose, montbretia, variegated yellow archangel and Himalayan balsam. No records were returned within the Site boundary.

3.6.2 No Invasive Non-Native Species (INNS) were recorded on-Site during the extended habitat survey.

4 ASSESSMENT

4.1 Overview

4.1.1 This section seeks to identify the potential for effects to occur on habitats and protected and notable species which could be considered as reasonably likely to occur as a result of the Proposed Development. The proximity to statutory designated sites and potential effects on their qualifying interests is discussed. Measures are proposed for the protection of sensitive habitats and species, and recommendations are made for further pre-construction surveys and mitigation, if required.

4.1.2 The Proposed Development has been designed to minimise the potential for effects on sensitive ecological features through retaining all existing boundary features at the Site; thereby ensuring existing wildlife corridors and habitat connectivity are maintained.

4.2 Statutory designated sites

4.2.1 The Site does not form part of any statutory designated sites for nature conservation. A total of four nationally statutory designated sites are located within 5 km of the Site, with a further three internationally designated sites located within 10 km of the Site. No additional internationally designated sites designated with bat qualifying interest were identified within 30 km of the Site.

4.2.2 No direct or indirect impacts on habitats of any statutory designated sites are anticipated from the Proposed Development due to the separation distance between the Site and statutory designates sites and no apparent pathways (i.e. hydrological) present between the Proposed Development and statutory sites. In addition, standard good practice construction measures to ensure runoff control and pollution prevention will be implemented during construction of the Proposed Development. These measures will be set out in a Construction Environment Management Plan (CEMP) and will safeguard off-site habitats and the species they support. A CEMP can be secured through a suitably worded planning condition. With such measures in place, no indirect effects are anticipated on statutory designated sites and protected habitats within the wider area.

4.2.3 Multiple statutory designated sites located within 10 km of the Site are designated due to the known presence of lesser horseshoe bat maternity and/or hibernation roosts.

4.2.4 Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy SAC has multiple sites located within proximity to the Site, the closest located *c.* 480 m south of the Site. Sites associated with the SAC are thought to support up to 4% of the UK species population. In the absence of mitigation measures, the Proposed Development may impact foraging and commuting bats, which could be associated with the SAC due to the distance between the Site and the designated sites. Foraging and commuting bats are further discussed in **Section 4.4**. Potential impacts to lesser horseshoe bats associated with the SAC are further examined in the Report to Inform a Habitats Regulations Assessment (HRA) in **Appendix 7**.

4.3 Habitats

4.3.1 The construction of solar farms generally requires very low levels of direct and permanent land take (typically less than 5% footprint on the ground) for the infrastructure. Direct loss of habitat is therefore

considered to be small and will comprise mostly of low ecological value agricultural habitat, which is widely present in the local and regional landscape.

4.3.2 Effects during construction relate to physical disturbance and removal of agricultural land, primarily comprising temporary compaction and soil disturbance from plant machinery and vehicles. For the operational lifetime of the Proposed Development the land will be replaced by a more species and structurally diverse grassland, which will be managed throughout the lifetime of the Proposed Development to provide higher value habitat for a range of wildlife.

4.3.3 The proposed access tracks will exploit existing farm accesses and will also avoid removing mature trees. Any access track within tree root protection areas (RPAs) will utilise geocell protection, with hand-dug fence installation also required in RPAs (see *Detailed Landscape Proposals*). However, in order to facilitate access from the B4393, an existing access point requires widening. To avoid impacts to a mature tree located within the hedgerow directly north of access point (see **Photograph 6** in **Appendix 1**), widening works can only be conducted in a southern direction along a species-rich hedgerow. Here, 11.5 m of hedgerow is proposed to be removed and translocated within the Site to infill an existing hedgerow gap (following guidance in paragraph 8.36 of the Powys Local Development Plan (2011 to 2026) Supplementary Planning Guidance Biodiversity and Geodiversity). Following completion of the construction period, a newly planted 11.5 m section of hedgerow will be further planted at this access point. It is expected that decommissioning works may require removal of hedgerow in this location. Any removed hedgerow would be replaced with newly planted hedgerow of equivalent species assemblage and length.

4.3.4 The layout of the Proposed Development has mostly been designed to maintain a stand-off buffer of at least 5 m from boundary features such as hedgerows, ditches and trees, and 10 m from woodland. Newly created hedgerow and scrub habitats will also include 5 m buffers. These will be retained and protected during construction, following British Standards BS5837:2012 *Trees in relation to design, demolition and construction*[22]. Overall, the network of higher ecologically valued habitats will maintain and enhance habitat connectivity and linkages across the Site itself and with the surrounding wider landscape. These habitats will be enhanced as set out in a separate BMP (**Appendix 6**) and as illustrated in the *Detailed Landscape Proposals*.

4.3.5 Opportunities have been sought to provide an overall biodiversity net benefit. Habitat enhancement and management measures set out in the *Detailed Landscape Proposals* will enhance the Site for the benefit of local wildlife. The design and long-term management of the land seeks to maintain and improve functionality through protecting and enhancing potentially important wildlife corridors. This is through strengthening connectivity and linked habitats via native species hedgerow and tree planting, scrub planting, pond creation and extensive areas of species and structurally diverse grassland creation. These measures will provide enhanced wildlife benefits compared to the low value agricultural land which is currently present.

4.3.6 The following habitat enhancement measures are proposed for the Site:

- Native tree (49 2.5 m-3 m tall trees and 14 1.5 m-1.75 m tall whips) and hedgerow planting (106 m), including infilling of existing hedgerow gaps (324 m);

[22] https://www.bathnes.gov.uk/sites/default/files/2020-01/BS5837%202012%20Trees.pdf (Accessed: 11st November 2025).

- Creation of a single pond (c. 0.06 ha) with 40 m of pre-planted coir matting and created wetland grassland margins (c. 0.05 ha);
- Development of extensive areas of species and structurally-diverse grassland under the solar panels (c. 8.01 ha);
- Development of extensive areas of species and structurally-diverse dedicated open meadow (c. 2.48 ha) and wildflower margins around the Site perimeter and field boundaries (including a 10 m buffer along the central track lined by parallel hedgerows/tree lines which is considered to be a wildlife corridor, as well as a 10 m buffer along a northern hedgerow) (c. 1.15 ha);
- Creation of mixed scrub (c. 0.04 ha); and,
- Installation of wildlife boxes/hotels and hibernacula (see **Appendix 6**).

4.3.7 With the avoidance of sensitive habitats, it is considered that the infrastructure required to support solar panels (i.e., the frames) would result in little, if any, permanent damage to the habitats present, being mounted on screws or pile driven frames.

4.3.8 A CEMP will be submitted; measures to be implemented would include standard pollution prevention controls to avoid run-off as a result of any works. The provision of a CEMP should be subject to a suitably worded planning condition.

4.3.9 Minimal negative impacts on retained habitats would be mitigated through the enhancement of habitats, with measures identified within the Net Benefit for Biodiversity (NBB) statement, and supporting Biodiversity Management Plan (BMP), which are presented within **Appendix 5** and **Appendix 6** respectively.

4.3.10 Furthermore, it should be considered that the Proposed Development would be temporary and would be decommissioned with minimal trace at the end of its lifespan, with vegetation recolonisation and seed bank restoration to form part of the measures to reinstate vegetation. Should hedgerow removal be required to facilitate access during decommissioning, then this will be replaced with newly planted hedgerow upon completion.

4.3.11 Decommissioning would be undertaken in an environmentally sensitive manner and be subject to a Decommissioning Environmental Management Plan (DEMP).

4.4 Protected and Notable Species

Birds

4.4.1 All wild birds, their nests and eggs, with few exceptions, are protected under the Wildlife and Countryside Act 1981 (as amended). Over eighty species or groups of species are listed under Schedule 1 of the Act, which confers special protection with increased penalties for offences committed.

4.4.2 Depending on the timing, construction of the Proposed Development has the potential to impact upon breeding birds through disturbance associated with construction activities, and damage to habitat, ground nesting species may be susceptible to nest damage.

4.4.3 Site clearance activities, where commenced during the core breeding season (1st March to 31st August inclusive) would be subject to a pre-clearance survey by a suitably experienced ecologist to identify any active wild bird nests (within 72 hours). Should any active nests be found, works would only proceed under the advice of the appointed ecologist. Work exclusion buffers around identified nest

sites would be implemented where necessary in accordance with best available species guidance applicable at the time and using professional judgement.

4.4.4 A total of 28 bird species were recorded breeding within the BBS Area during the breeding bird surveys. Of the 28 species, ten are classed as Priority Species, although no ground-nesting Priority Species were recorded breeding within the Site. Six Priority Species were identified breeding within the Site, with three additional Priority Species recorded within the 100 m Site buffer.

4.4.5 Ground-nesting bird species are considered most likely to be impacted by the Proposed Development, as the presence of solar panels throughout the operation of the Proposed Development would likely result in the displacement ground nesting species favouring open habitats, if they were to be present at the Site. However, as no ground-nesting species were recorded breeding on-Site, it is considered unlikely that the Proposed Development will result in negative impacts to ground nesting species.

4.4.6 Local bird populations are also considered unlikely to be subjected to negative impacts as a result of the Proposed Development, as the majority of boundary habitat features are to be retained and protected during the construction phase of the Proposed Development.

4.4.7 Habitat enhancement opportunities which form a major part of solar farm developments will benefit a variety of breeding bird species, including a variety of other Section 7 species listed on the Environment (Wales) Act 2016. Replacing agricultural fields with species-diverse grassland and wildflower meadow/margins, planting species-rich hedgerows, creating scrub and a pond will enhance nesting and foraging opportunities for the bird assemblage within and adjacent to the Site.

4.4.8 Further habitat enhancements for birds at the Site include the provision of five bird boxes installed on mature trees at the Site. Examples and specification of bird boxes to be installed at the Site are included within the BMP.

Bats

4.4.9 All species of British bat are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Bats are further protected under the Conservation of Habitats and Species Regulations 2017 (as amended) and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

<u>Roosting bats</u>

4.4.10 The extended habitat survey identified habitats including mature trees with the potential to support roosting bats across the Site. It is anticipated that all mature trees and habitats supporting mature trees are to be retained and protected with appropriate standoff buffers.

4.4.11 Should it later be discovered that any trees are to be directly impacted by the Proposed Development, a Ground Level Tree Assessment (GLTA) should be undertaken following BCT guidelines (BCT, 2023). The results of the GLTA will inform if additional surveys for roosting bats are required.

4.4.12 Statutory designated sites present within proximity of the Site are designated due to the presence of lesser horseshoe maternity and hibernation roosts. Lesser horseshoe bats typically roost in buildings and structures (as detailed within Table 3.2 of the BCT guidelines (Collins, 2023)). Given that no buildings or structures are present within the Site, the presence of roosting lesser horseshoe bats at the Site, including those associated with statutory designated site populations, is considered unlikely.

4.4.13 No permanent lighting is proposed during operational phase of the Proposed Development. However, during construction, any lighting required would be subject to a sensitive lighting strategy which would be informed by current guidance 'Guidance Note 08/23: Bats and artificial lighting at night' (BCT, 2023[23]). This would ensure that any lighting during construction would be sensitive in terms of design, with light spillage avoiding habitats, such as woodland and mature trees, that may support roosting bats.

4.4.14 Habitat enhancements for bats at the Site include the provision of five bat boxes installed on mature trees at the Site. Examples and specification of bat boxes to be installed at the Site are included within the BMP.

Foraging and commuting bats

4.4.15 The most favourable foraging and commuting habitats (i.e. hedgerows, woodland and scrub) will be retained and protected throughout the construction period with suitable buffer zones implemented. This includes a 10 m buffer from an on-Site double hedgerow which lines the central farm track, considered to act as a wildlife corridor for bats within the Site and wider area. These 10 m buffers are proposed to be converted to species-diverse wildflower grassland in order to improve bat commuting and foraging opportunities along this feature. Small-scale loss of hedgerow will be required in order to facilitate access from the B4393 roadway (11.5 m hedgerow section), however the extent of this is not considered likely to result in a substantial impact on foraging and commuting routes. This hedgerow is proposed to be translocated within the Site, with the removed area reinstated with newly planted hedgerow following the construction phase. The Proposed Development would result in the loss of low-quality foraging and commuting habitat for bats only, given the Site is mostly agricultural grassland with retained boundary features.

4.4.16 As above for roosting bats, no permanent lighting is proposed during operational phase of the Proposed Development and any lighting required during construction would be subject to a sensitive lighting strategy to avoid light spillage onto areas that may be used by foraging and commuting bats, such as hedgerows, scrub and woodland. The requirement and detail for a lighting strategy can be subject to a suitably worded planning condition.

4.4.17 Lesser horseshoe bats associated with statutory designated sites may utilise the Site for foraging and commuting. However, bat surveys undertaken at the Site revealed only low use by the species, with four passes (1.2% of total passes) recorded across three NBW surveys and an overall percentage of all bat passes of 0.64%, equivalent to a BAI of 0.13 per hour across seven months of automated static surveys.

4.4.18 As identified from the NBW surveys and as detailed within Table 3.4 of BCT guidelines (Collins, 2023), lesser horseshoe bats favour woodland and boundary features for foraging and commuting over open habitat. As such, the loss of open habitat as a result of the Proposed Development is considered unlikely to impact the foraging and commuting value of the Site for lesser horseshoe bats, which may be associated with statutory designated sites located within proximity to the Site. The enhancement of boundary features with tree and hedgerow planting, together with adjacent wildflower margins is considered to benefit opportunities for foraging and commuting lesser horseshoe bats. Potential

[23] https://www.bats.org.uk/news/2023/08/bats-and-artificial-lighting-at-night-ilp-guidance-note-update-released - Accessed January 2026.

impacts to lesser horseshoe bats associated with the SAC are further examined in the HRA report in **Appendix 7**.

4.4.19 Habitat improvements as above, in addition to the creation of species-diverse grassland under and surrounding solar panels, wildflower meadow, pond creation and scrub, hedgerow and tree planting is also proposed. Such improvements would lead to enhanced commuting routes for bats through reinforcing the vegetation around linear features and ensuing edge habitats are retained and protected. Furthermore, grassland and pond creation within the Site will improve habitats for invertebrates which in turn increases foraging resources for bats.

Badger

4.4.20 Badger are protected by the Protection of Badgers Act 1992 and the Wildlife and Countryside Act 1981 (as amended).

4.4.21 No evidence of badger was recorded during the extended habitat survey, however habitats suitable to support badger sett creation, including grassland, hedgerow and woodland are present on-Site.

4.4.22 The area for the solar panel layout has been designed to avoid impacting the more ecologically valuable habitats, such as along field edges where badgers are most likely to create setts, or use when foraging and commuting. These habitats will be retained, protected and enhanced.

4.4.23 Habitat enhancements include the management of species-diverse grassland within the Site, creation of wildflower margins, hedgerows and planting of new scrub habitats. Such enhancements are considered to provide badgers with enhanced foraging and commuting resources within a secure and relatively undisturbed environment.

4.4.24 Badger are a mobile species and new setts can be created at any time. It is recommended that a pre-commencement survey is undertaken at the Site within two-weeks prior to the commencement of works. If a badger sett is found within 30 m of the Site, a granted licence from NRW may be required prior to the commencement of works on-Site. A pre-commencement badger survey can be secured by a suitably worded planning condition.

4.4.25 It is proposed that standard good practice measures adopted during construction will safeguard badgers as well as other wildlife that may occasionally be present on Site (e.g., foraging during non-construction hours). These will include covering any excavations left open over night or fitting with a means of escape (set no steeper than a 45^{o} angle), and safe storage of materials in secure compounds or stores. A Precautionary Working Method Statement (PWMS) for badgers is detailed in **Appendix 6**.

4.4.26 Once operational, the perimeter fencing will include mammal gates of gaps at the base at suitable locations (approximately every 200 m) to maintain connectivity in the landscape for potential badgers (and others small mammal species). Once constructed, the Proposed Development will not sever potential commuting routes used by badgers, with woodland and linear features such as hedgerows to be retained and protected or improved. Considering the above measures, no significant adverse impacts to badger are anticipated as a result of the Proposed Development.

Otter and Water vole

4.4.27 Otter is protected by Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the Habitats Regulations 2017 and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Water vole is protected under the Wildlife and Countryside Act 1981 (as amended).

4.4.28 Two watercourses are located within proximity to the Site, the closest of which lies *c.* 50 m south. These watercourses have the potential to support otter holts and/or resting places, however it is considered that works are sufficiently distanced from watercourses that, if present, otter or water vole would not be directly adversely impacted by the Proposed Development.

4.4.29 Once operational, the Proposed Development is not likely to have any effect on otters or their habitat in the locality. The Site will not be lit permanently, thus retaining dark corridors, particularly along hedgerows and tree lines. As for bats, should any artificial lighting be required during construction, this will be task specific and directed away from terrestrial boundary features within and adjacent to the Site.

4.4.30 Habitat enhancements and management could benefit otters in the future, in the event that they colonise the area. The Proposed Development will result in species-diverse grassland (within solar panel area), wildflower grassland meadows and margins, plus scrub and hedgerow planting. This would benefit terrestrial habitats for otters (if present in the locality), through increased foraging and commuting opportunities. The change in management practices on-Site could also be of benefit to the species, with grassland creation, the cessation of annual cultivation and likely inputs of pesticides and fertilisers, all contributing to improvements in local water quality. A created pond with adjacent wetland grassland would also improve foraging opportunities within the Site.

Hazel Dormouse

4.4.31 Hazel dormice are protected by Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the Habitats Regulations 2017 and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

4.4.32 Habitats at the Site including hedgerows, woodland and scrub have suitability to support dormouse. Habitats at the Site to be lost to the Proposed Development primarily consist of agricultural land, which is of low ecological value for hazel dormouse. Habitats of higher ecological value for hazel dormouse, including hedgerow and woodland are to be retained by the Proposed Development, other than minor areas of clearance to facilitate access at the Site.

4.4.33 Any small-scale vegetation clearance (including proposed translocation works) undertaken on habitats of high ecological value for hazel dormouse during the construction of the Proposed Development, could impact on individual dormice and therefore as a precautionary measure, any site clearance works should be undertaken following PWMS (see **Appendix 6**).

4.4.34 Habitat enhancements including native species planting and improving existing hedgerows are likely to result in localised habitat enhancements for hazel dormouse.

Amphibians

4.4.35 GCN are protected by Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the Habitats Regulations 2017 and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

4.4.36 Two ponds are located within 250 m of the Site without significant barriers to dispersal present between the Site and ponds. Both ponds have confirmed presence of GCN, as such it is considered likely that GCN are present within suitable terrestrial habitat on-Site and within the locale.

4.4.37 Habitats at the Site to be lost to the Proposed Development primarily consist of modified arable grassland, which is of low ecological value for amphibians. Habitats of higher ecological value for amphibians including hedgerow, scrub and woodland are to be retained by the Proposed Development, except an 11.5 m section of hedgerow which will be translocated within the Site in order to facilitate access.

4.4.38 While there may be temporary disturbance to the low value modified grassland habitat during construction, it will be converted to a more species diverse mix with management likely to be significantly reduced and as such, more favourable to amphibians post development. Overall, there is considered to be negligible loss of suitable habitats.

4.4.39 Standard measures to ensure run off control and pollution prevention will be used to protect aquatic and associated terrestrial habitats, ensuring no indirect effects on amphibians.

4.4.40 To avoid harm to individual GCN (and other amphibians), any vegetation clearance (including hedgerow translocation) undertaken during construction that could impact on amphibian suitable habitat, should be undertaken outside of the hibernation period (November- February inclusive) and follow PWMS, see **Appendix 6**.

4.4.41 As such, given the retention and avoidance of most amphibian suitable habitat, implementation of run-off and pollution measures, plus PWMS, no substantial adverse impacts to GCN during the construction period are anticipated.

4.4.42 As a result of habitat enhancements, including the creation of a single hibernacula, conversion of agricultural land to species-diverse grassland, the creation of a pond (ecologically connected to the wider landscape through created adjacent wetland and wildflower grassland), as well as planting of hedgerow and scrub areas, the development will provide higher value terrestrial habitat for amphibians post development. The Proposed Development is therefore considered to benefit GCN and other amphibian species in the local landscape, with long-term areas of undisturbed habitat made available, increasing landscape connectivity.

Reptiles

4.4.43 Widespread reptile species, namely the common lizard, slow worm, grass snake and adder are protected against killing, injuring and sale under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended).

4.4.44 The Site offers suitable habitat for common reptile species. Suitable habitat is however limited and primarily associated with field boundary habitats.

4.4.45 The placement of solar panels is likely to result in increased shading across the south-facing slope on which the Site is located, this in turn would reduce availability of basking locations. Furthermore, any vegetation clearance undertaken during construction of the Proposed Development could impact individual reptiles. Removal of suitable habitat is however likely to be limited and confined to small sections of field margins and therefore only likely to impact small numbers of common reptile species,

if present. As a precaution, any site clearance works would be undertaken following PWMS (see **Appendix 6**), which can be secured by a suitably worded planning condition.

4.4.46 Habitat enhancements including native species hedgerow planting, scrub, species diverse grassland, wildflower meadow / margins and pond creation across the Site are likely to result in localised habitat enhancements for reptile species, increasing foraging and commuting opportunities, particularly in areas that will remain free of panels and continue to offer basking habitat. The installation of one hibernacula will also offer increased refuge and hibernation opportunities for the species group.

Other Notable and Protected species

4.4.47 Habitat enhancements as part of the Proposed Development including native species planting, improving hedgerows, pond and grassland/wildflower margin and meadow creation across the Site are likely to result in localised habitat enhancements for other notable and protected species including brown hare, hedgehog and invertebrates.

4.4.48 Suitable vegetation clearance (including hedgerow translocation) at the Site will be undertaken following PWMS, as detailed above, which will also protect any faunal species such as hedgehog, which may be present at the Site (see **Appendix 6**).

4.4.49 Security fencing located around the Site perimeter will have gaps or mammal gates positioned at several locations (approximately every 200 m) along the base of fences in order to allow mammal species such as brown hare and hedgehog (amongst others) to continue to use the habitats on Site during the operational period. Such gaps or mammal gates will thereby maintain commuting and dispersal routes and opportunities to access relatively undisturbed habitat within the secured Site and connect to the wider landscape.

4.4.50 Refuge enhancements at the Site will also include the installation of five insect hotels/boxes and single hibernacula within suitable on-Site habitats.

4.5 Invasive Non-Native Species

4.5.1 It is an offence to plant or otherwise cause to grow in the wild species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended); this includes allowing the species to grow/spread, spreading the species or transferring polluted ground material from one area to another. Any waste containing these species can only be removed from site under appropriate waste management documentation (under the Environmental Protection Act 1990).

4.5.2 No INNS were recorded on-Site during the extended habitat survey. It is recommended that a pre-construction walkover is undertaken at the Site to determine the status of INNS at the Site within two-weeks prior to the commencement of the Proposed Development.

4.5.3 Should any INNS be recorded on-Site they should be appropriately managed and/or eradicated by a specialist to prevent further spread and comply with relevant legislation.

5 MITIGATION AND ENHANCEMENT SUMMARY

5.1.1 **Table 5.1** summarises the mitigation and enhancement measures recommended in the BMP for the Proposed Development.

5.1.2 In addition, the BMP will ensure that there are tangible biodiversity enhancements and ensure associated management and monitoring. These measures accord with Policy 3 of NPF4 by contributing to the enhancement of biodiversity, through restoration of habitats and building and strengthening nature networks, for example through improving connectivity through the Site with hedgerow enhancements. Implementation of buffers on higher quality habitats and restoration of heavily managed arable habitats on-Site as proposed, are also key fundamentals of Policy 5 of NPF4.

Table 5.1: Mitigation and Enhancement Summary

Feature	Summary of Mitigation and Enhancement
Designated Sites	• Pollution control measures to be adopted and implemented through a CEMP. • Statutory designated sites, designated due to the presence of lesser horseshoe bat maternity and/or hibernation roosts are present within proximity of the Site. In the absence of mitigation measures, populations associated with designated sites could be negatively impacted by the Proposed Development.
Habitats	• Existing features of biodiversity value would be largely retained and protected throughout the construction and operation phases. An 11.5 m section of hedgerow is proposed to be translocated within the Site. • Enhancements include newly created species-diverse grassland under panels and in dedicated open meadows, wildflower margins, created hedgerow (including infilling), scrub planting, tree planting and pond creation. • All retained trees within the vicinity of construction areas would be protected during construction works in-line with BS 5837:2012 Trees, in relation to design, demolition and construction. • Pollution prevention measures would be implemented to prevent pollution and run-off occurring during the construction phase. • The scheme delivers biodiversity benefits and enhancements as detailed in the BMP which accords with NPF4.
Birds	• Removal/loss of nesting bird habitats would be undertaken outside of the bird breeding season (1st March to 31st August inclusive). If vegetation works are necessary during the breeding season, suitable nesting habitat would be searched by a suitably experienced ecologist prior to works commencing. Only when the ecologist is satisfied that no offence would occur under the legislation would works be permitted to proceed. • Breeding and non-breeding species would benefit from the additional native species planting proposed across the Site. • Installation of five bird boxes on mature trees within the Site will increase nesting opportunities.
Bats	• No works are likely to affect the conservation status or risk disturbance to bats. Should plans change, and any trees are to be impacted by the Proposed Development, a GLTA will first be undertaken to determine if the trees offer potential bat roost features. Results of a GLTA survey should detail next steps, if required. Additional requirements may include further surveys including dusk emergence surveys or inspections at height.

Feature	Summary of Mitigation and Enhancement
	• If bats are confirmed to be roosting within any tree to be impacted by proposed works, the data gathered would be used to support a licence application to Natural Resource Wales to destroy/disturb the bat roost and to inform potential mitigation measure to reduce and/or avoid impacts if appropriate. • There is no suitable roosting habitat present to support lesser horseshoe bats, which are known to be roosting off-Site in a statutory designated site. • Roost opportunity enhancements include the installation of five bat boxes on mature trees within the Site. • Bat surveys reveal low use of Site by lesser horseshoe bats, with only 1.2% of calls across three NBW surveys and 0.64% of calls or an average of 0.13 calls per hour across seven automated static surveys. • Boundary features, including woodland edge and hedgerows provide suitable foraging and commuting habitat for a range of bat species, including lesser horseshoe bats which may be associated with statutory designated sites located within proximity to the Site. • Once operational, the Site should not negatively impact foraging and commuting bats as boundary features are to be retained and enhanced, and artificial lighting will not be used after construction. If any artificial lighting is required during construction of the Proposed Development, it shall be in accordance with current guidance 'Guidance Note 08/23: Bats and artificial lighting at night' (BTC, 2023).
Badgers	• A pre-construction survey should be undertaken within two-weeks prior to the commencement of works at the Site to determine the status of badger on-Site. The survey will determine if any new setts have been created since baseline surveys were undertaken. • If found to be present, a suitable buffer of up to 30 m would be implemented from all active badger setts. If this is not possible a NRW licence would be obtained. • Two-way mammal gates will be installed at regular intervals (at approximately every 200 m) within the perimeter fencing to allow the continued movement of badger, and other mammals across the Site.
Amphibians	• GCN are known to be located within 250 m of the Site, considered present on-Site and within the locale. • Precautionary – works affecting suitable habitat (if required) to be undertaken following PWMS. • Habitat / refuge enhancements at the Site include the creation of one hibernaculum.
Otter and Water vole	• Two water courses are located within proximity to the Site, although lie 50 m south at the closest point. The Proposed Development will not directly impact otter or water vole, if present within the locality of the Site.
Hazel Dormouse	• Precautionary – works affecting suitable habitat (if required) to be undertaken following PWMS.
Reptiles	• Precautionary – works affecting suitable habitat (if required) to be undertaken following PWMS.
Other notable and protected species	• PWMS employed to protect other species on-Site will also protect other notable and protected species, if present. • The installation of mammal gates (approximately every 200 m) within perimeter fencing will allow continued movement of other notable and protected species across the Site.

Feature	Summary of Mitigation and Enhancement
	• Habitats enhancements to be implemented at the Site include additional native species planting which would benefit a range of protected and notable species including brown hare, hedgehog and invertebrates. Insect houses will also be installed.
Invasive non-native species	• A pre-commencement walkover survey will be undertaken within two-weeks prior to the commencement of construction works at the Site, to determine if any INNS are present. If INNS are found to be present, suitable methods to eradicate/control them will be undertaken.

Figure 1: Site Location Plan

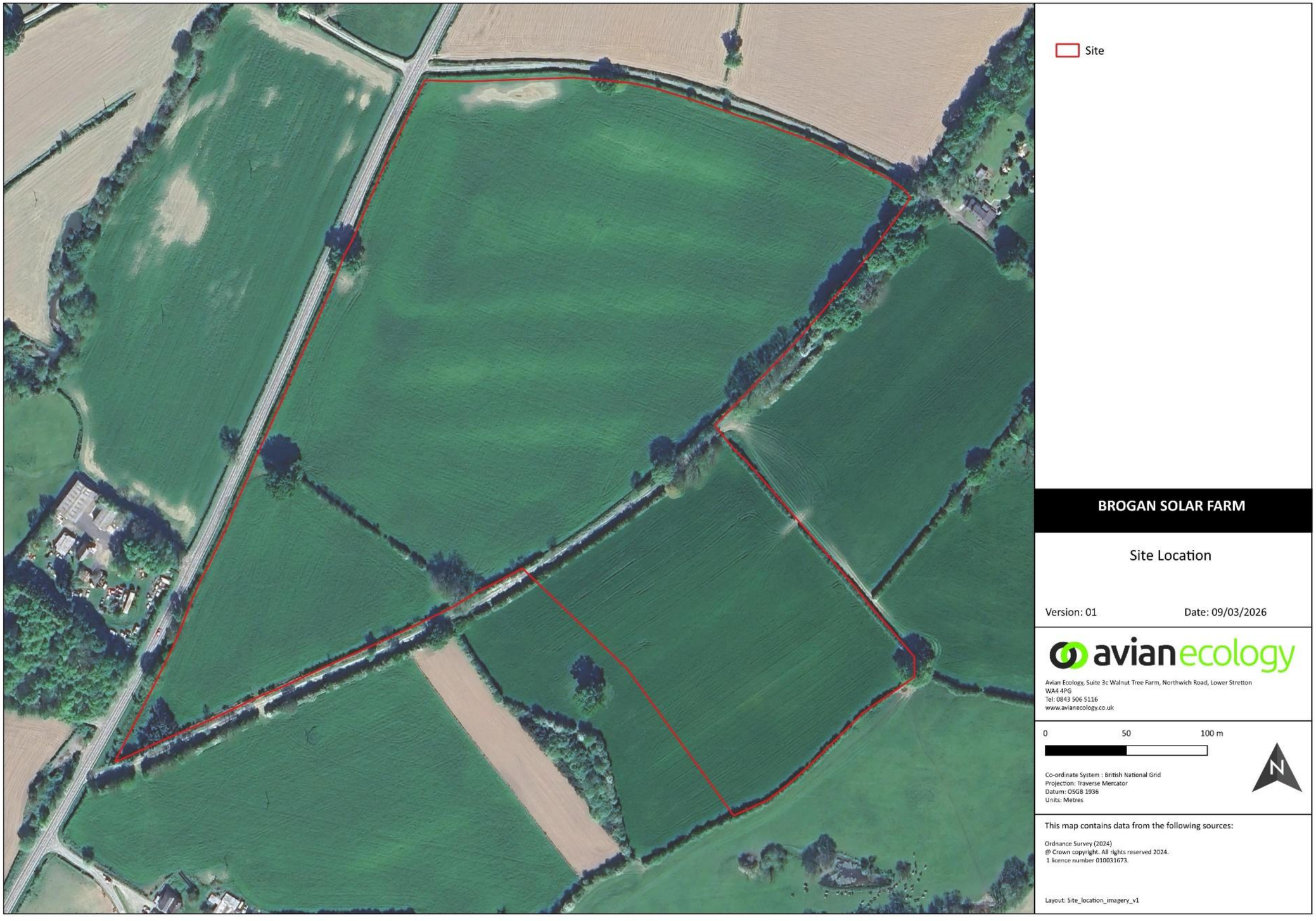


Figure 2: Breeding Bird Survey Plan

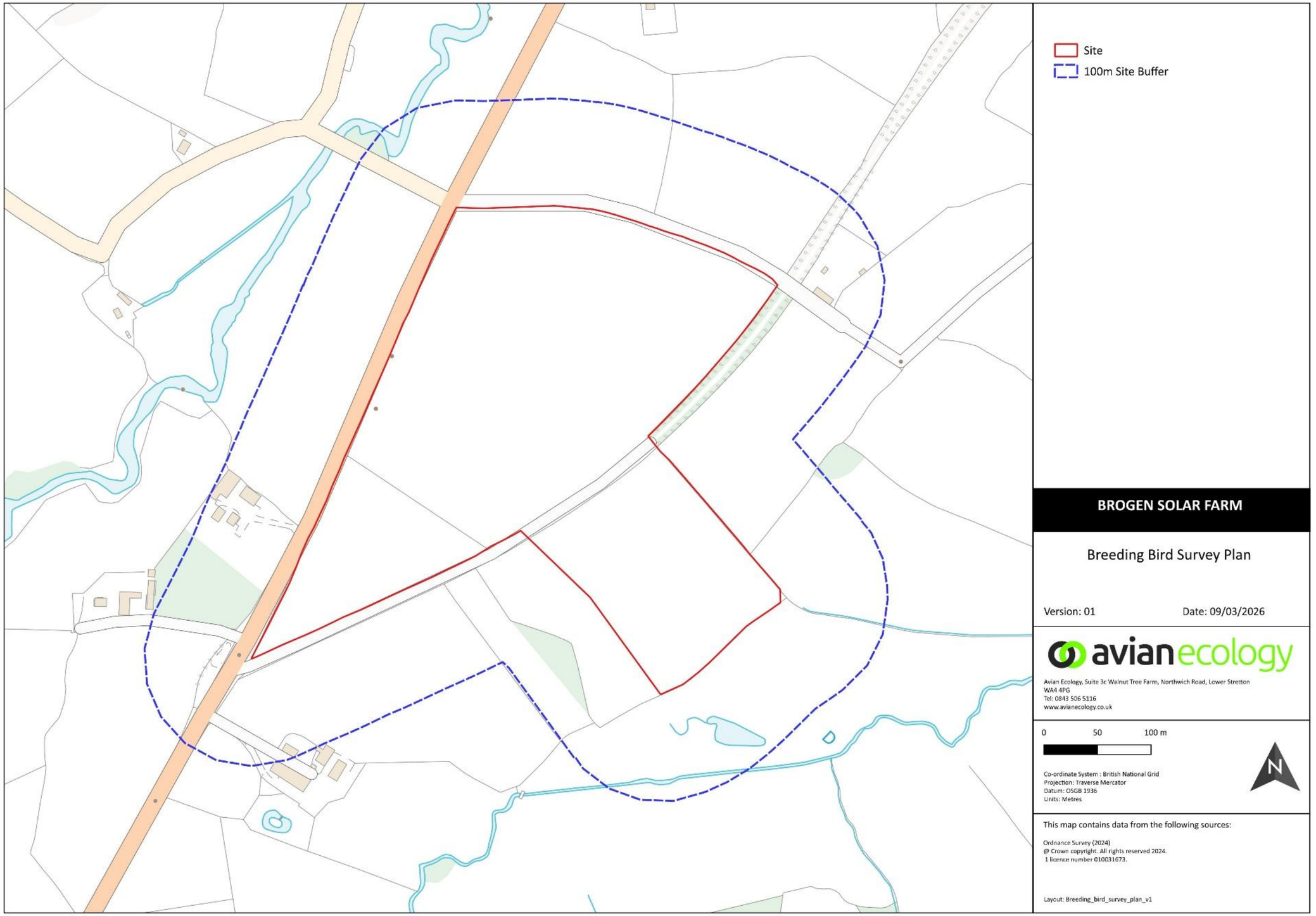


Figure 3: Bat Activity Survey Plan

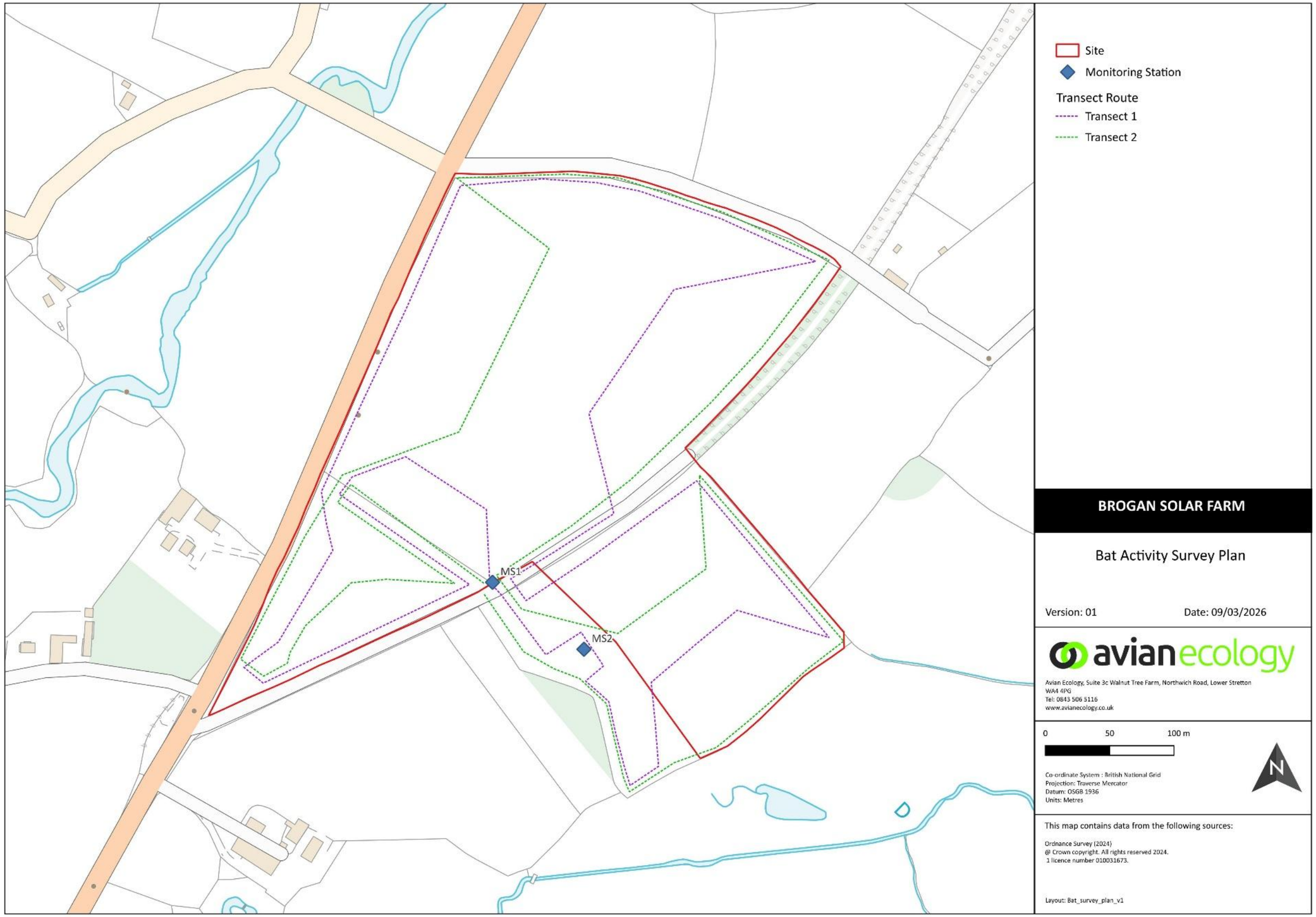


Figure 4: Pond Location Plan

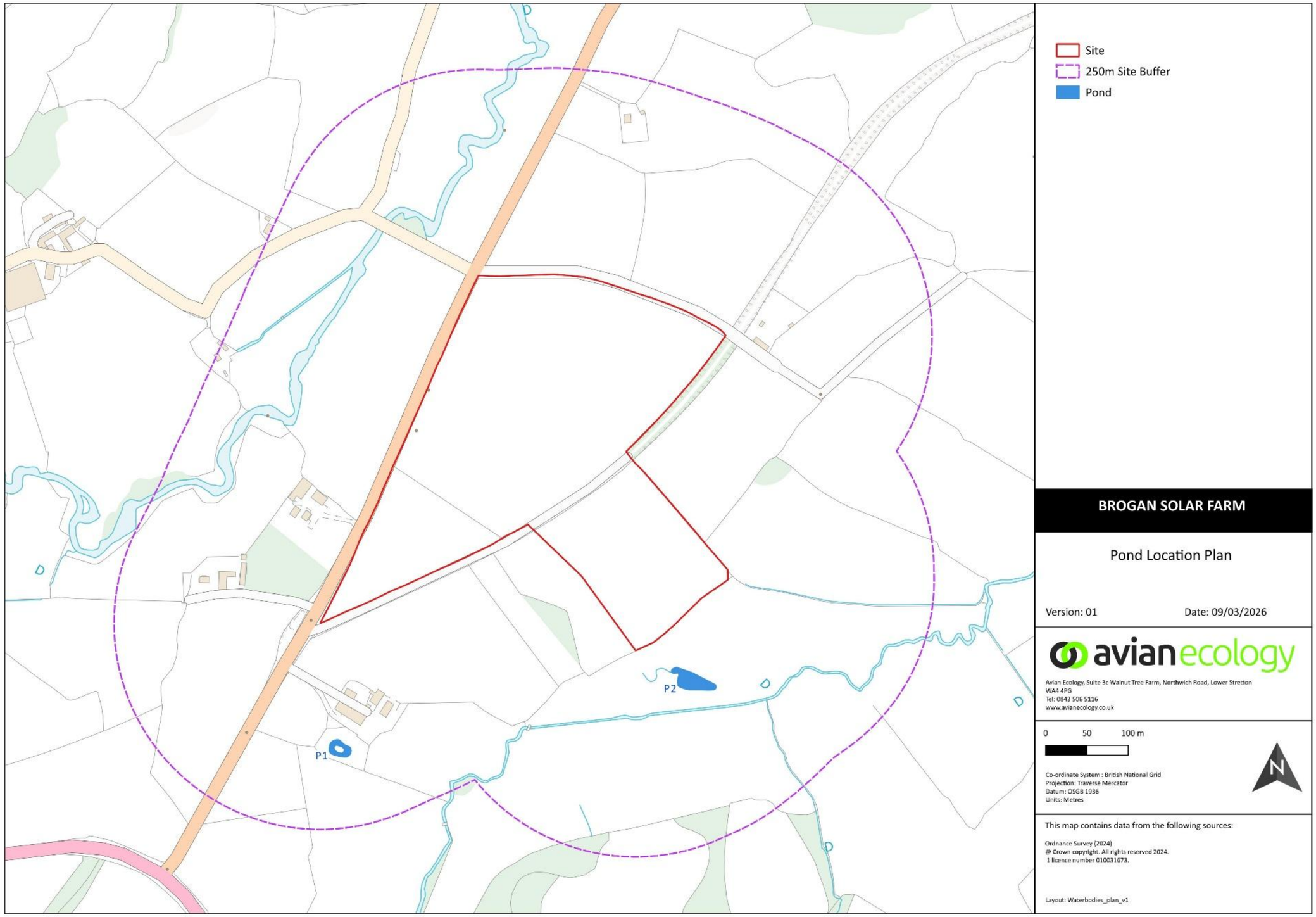


Figure 5: Statutory Designated Sites

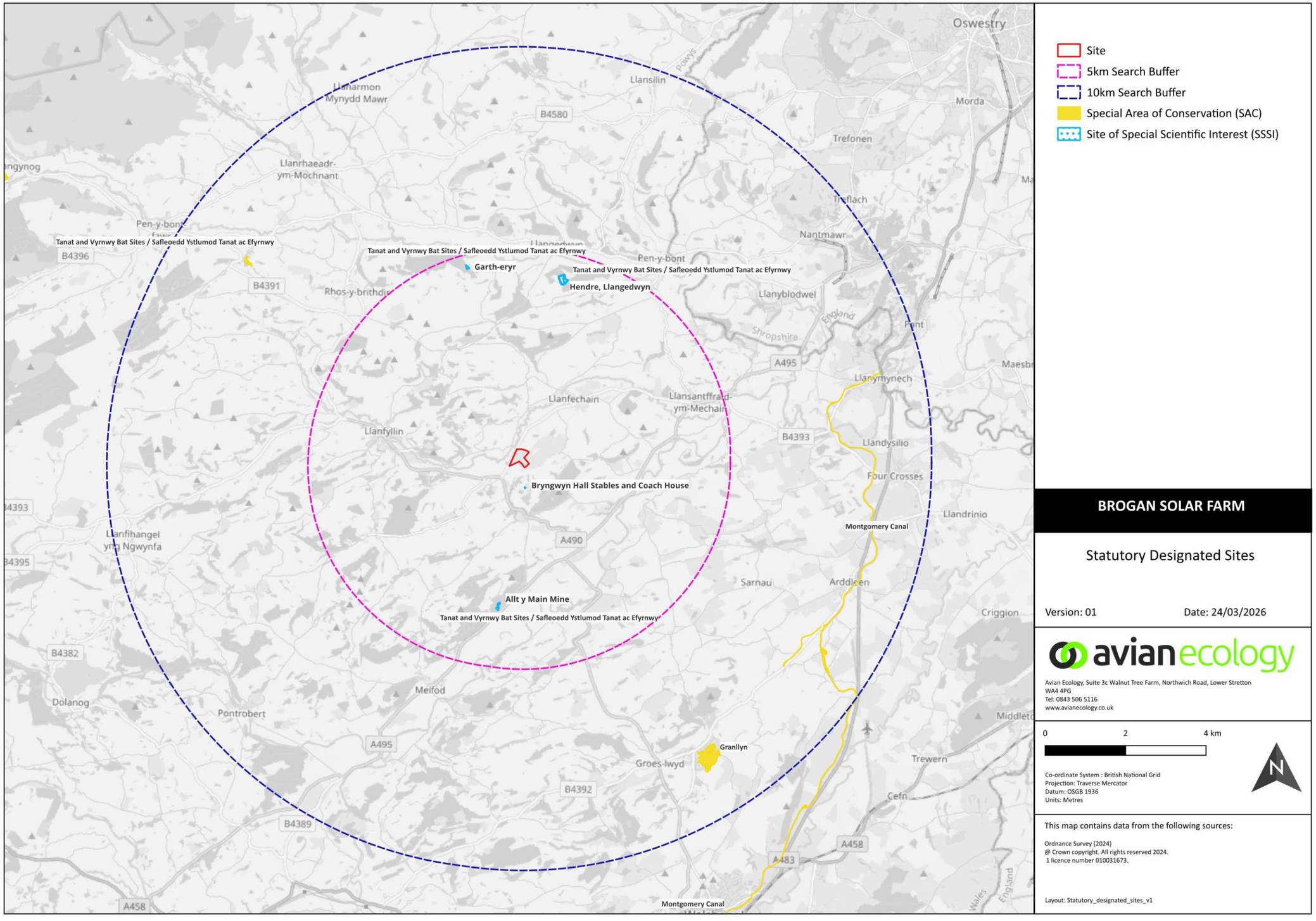
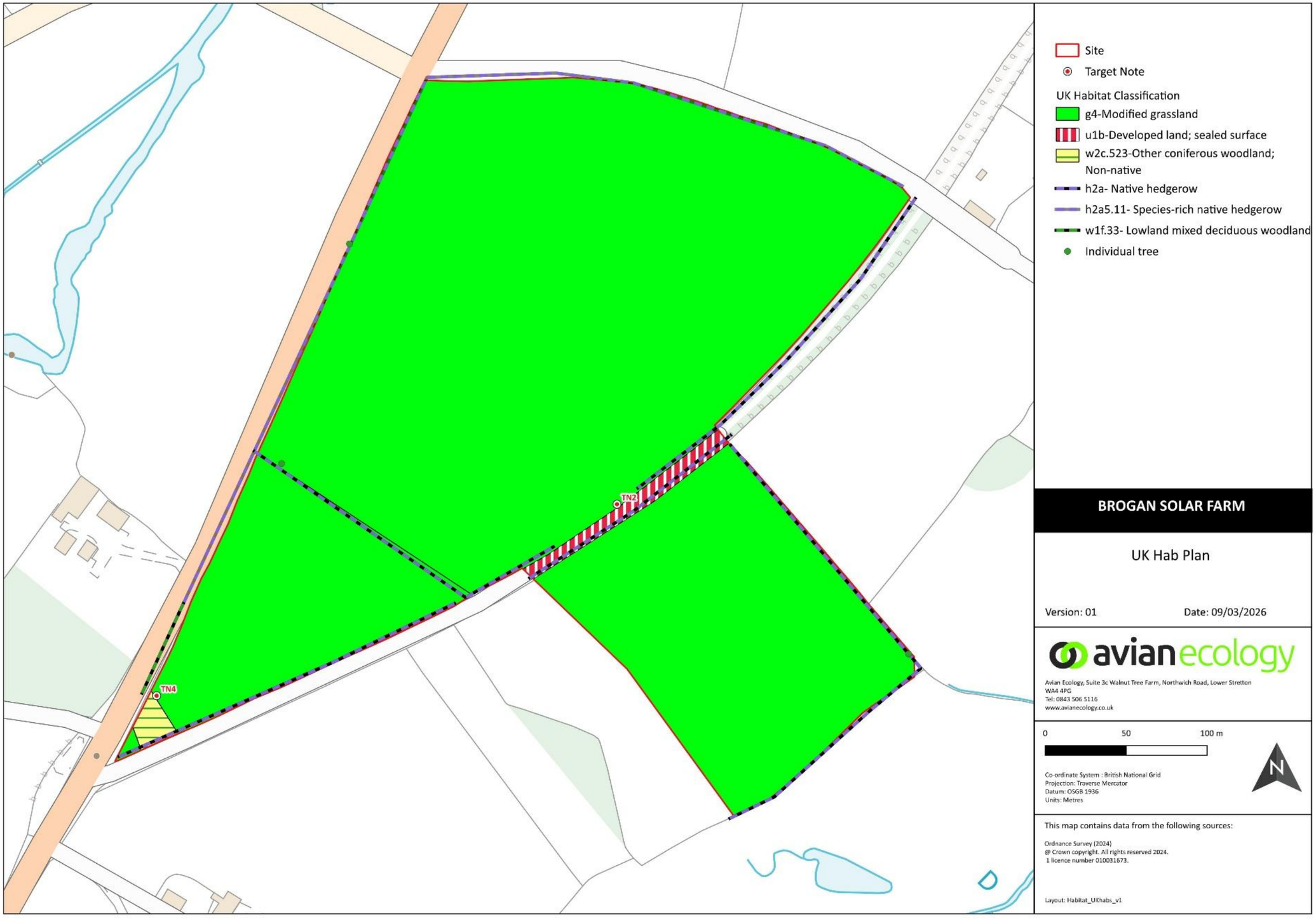


Figure 6: UK Habitat Plan



Appendix 1: Photographs

Table A1.1 presents the photographs taken on-Site during the extended habitat survey.

Table A1.1: Photographs

Photograph	Photograph Reference and Description
	**Photograph 1:** Example of modified grassland (g4) on-Site.
	**Photograph 2:** Example of other coniferous woodland (w2c) on-Site.
	**Photograph 3:** Example of native hedgerow (h2a) on-Site.

Photograph	Photograph Reference and Description
	**Photograph 4:** Example of species-rich native hedgerow (h2a5) on-Site.
	**Photograph 5:** Example of lowland mixed deciduous woodland (w1f); line of trees on-Site.
	**Photograph 6:** Example of individual trees on-Site.

Photograph	Photograph Reference and Description
	**Photograph 7:** TN1 - Hawthorn sapling planting present, presumably to infill hedgerow gap.
	**Photograph 8:** TN2 - Pile of dead wood – natural refugia for herptiles.

Appendix 2: Breeding Bird Survey Report

Appendix 3: Bat Survey Report

Appendix 4: GCN Survey Report

Appendix 5: Net Benefit for Biodiversity (NBB) statement

Appendix 6: Biodiversity Management Plan

Appendix 7: Report to Inform a Habitats Regulations Assessment