Brogan Solar Farm

on behalf of Fuse Renewables Ltd.

Report to Inform a Habitats Regulations Assessment

avian ecology

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CONTENTS

FIGURES

APPENDICIES

1 PURPOSE OF REPORT

1.1.1 This report has been prepared in relation to a proposed solar development (the 'Proposed Development') located on land located to the east of the B4393 near Llanfyllin, North Wales, SY22 5LQ; central Ordnance Survey (OS) grid reference: SJ 17662 18915 (the 'Site').

1.1.2 This report has been produced to assist in the undertaking of a Habitats Regulations Assessment (HRA) by the relevant Competent Authority (Welsh Ministers) for the Proposed Development.

1.1.3 It provides information regarding the Proposed Development with respect to its potential for Likely Significant Effects (LSEs) upon the qualifying features of European sites.

1.1.4 The Proposed Development includes the installation and operation of ground mounted solar photovoltaic arrays with all associated works, equipment and necessary infrastructure, as illustrated on the *Proposed Layout Plan* (Drawing Number: BGS.LYT.DEV.06; REV: 06) produced by Fuse Energy Ltd.

2 LEGISLATIVE BACKGROUND

2.1.1 Council Directives 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive') and 2009/147/EC on the conservation of wild birds (the 'Birds Directive') provide for the designation of sites for the protection of certain species and habitats – Special Area of Conservations (SACs) and Special Protection Areas (SPAs). Such sites designated under the Directives together with Ramsar sites (wetlands of international importance) are collectively termed European sites and form part of a network of protected sites across Europe, known as the Natura 2000 network.

2.1.2 In the UK, the Conservation of Habitats and Species Regulations (2017) (the '2017 Regulations') transpose the Habitats and Birds Directives into national law. Changes were made to the 2017 Habitats Regulations by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (the '2019 Regulations'). The 2017 and 2019 Regulations are collectively referred to as the 'Habitats Regulations'.

2.1.3 Under the amendment made by the 2019 Regulations SACs and SPAs in the UK no longer form part of the EU's Natura 2000 network, but form part of a national site network. The national site network includes:

- Existing SACs and SPAs; and,
- New SACs and SPAs designated under the 2019 Regulations.

2.1.4 Wetlands of International Importance (known as Ramsar sites) do not form part of the national site network, but many overlap with SACs and SPAs, and may be designated for the same or different qualifying features. Ramsar sites are afforded the same protection as European sites.

2.1.5 With reference to Wales, the Habitats Regulations require Welsh Ministers to secure compliance with the requirements of the Directives. Any new powers in the 2019 Regulations must be exercised in line with the Directives and retained EU case law up to 1st January 2021.

2.1.6 As a Competent Authority, an assessment under the Habitats Regulations, known as a Habitats Regulations Assessment (HRA), must be carried out to test if a project or plan could significantly harm the qualifying features of a European site, in order to decide whether to approve the project or plan.

2.1.7 The Competent Authority may only approve a project or plan, where it can be concluded that it will not adversely affect the integrity of a European site. The exception to this is where there are Imperative Reasons of Overriding Public Interest (IROPI) and there are no other feasible alternatives,

which would not affect the integrity of the European site. In this case the competent authority must assess all compensatory measures required to ensure the protection of the overall coherence of the national site network.

2.1.8 This HRA process can involve up to four stages, as summarised below:

- Stage 1 - Screening: This stage identified the likely impacts upon a European Site of a project or Plan, either alone or 'in combination' with other projects or plans, and considers whether these impacts are likely to be significant.

- Stage 2 – Appropriate Assessment: Where there are likely significant impacts, this stage considered the impacts of the Plan or project on the integrity of the relevant European sites, either alone or 'in combination' with other projects or plans, with respect to the sites' structure and function and their conservation objectives. Where there are adverse impacts, it also includes an assessment of the potential mitigation for those impacts.

- Stage 3 – Assessment of Alternative Solutions: Where adverse impacts [on the integrity of the site] are predicted, this stage examines [whether or not there are alternative ways of achieving the objectives of the project or Plan that avoid adverse impacts on the integrity of European sites.

- Stage 4 – Assessment Where No Alternative Solutions Exist and Where Adverse Impacts Remain: This stage assessed compensatory measures where it is deemed that the project or Plan should proceed for IROPI.

2.1.9 Stages 1 and 2 are covered by Regulation 63 and Stages 3 and 4 are covered by Regulation 64 and 68.

2.1.10 With respect to Stage 2, the integrity of a European Site relates to the site's conservation objectives and has been defined in guidance as "the coherent sum of the site's ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated"[1]. An adverse effect on integrity, therefore, is likely to be one which prevents the site from making the same contribution to favourable conservation status for the relevant feature as it did at the time of designation.

2.1.11 The HRA screening process uses the threshold of LSE to determine whether effects on European sites should be the subject of further assessment. The Habitats Regulations do not define the term LSE. However, in the Waddenzee case (Case C127/02)[2], the European Court of Justice found that an LSE should be presumed and an Appropriate Assessment (AA) carried out if it cannot be excluded on the basis of objective information that the plan or project will not have significant effects on the conservation objectives of the site concerned, whether alone or in combination with any other project. The Advocate General's opinion of the Sweetman case (Case C-258/11)[3] further clarifies the position by noting that for a conclusion of an LSE to be made "there is no need to *establish* such an effect...it is merely necessary to determine that there *may be* such an effect" (original emphasis).

2.1.12 For the reasons highlighted above the assessment process follows the precautionary principle throughout and the word 'likely' is regarded as a description of a risk (or possibility) rather than in a legal sense an expression of probability.

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[1] Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, at section 4.6.3 (Updated Version, November 2018)

[2] Judgment of the Court (Grand Chamber) of 7 September 2004. Landelijke Vereniging tot Behoud van de Waddenzee and Nederlandse Vereniging tot Bescherming van Vogels v Staatssecretaris van Landbouw, Natuurbeheer en Visserij. Reference for a preliminary ruling: Raad van State - Netherlands. Case C-127/02

[3] Judgment of the Court (Third Chamber), 11 April 2013 Peter Sweetman and Others v An Bord Pleanála. Request for a preliminary ruling from the Supreme Court (Ireland) Case C-258/11

2.1.13 Screening can be used to screen-out European sites and elements of works from further assessment, if it is possible to determine that significant effects are unlikely (e.g., if sites or interest features are clearly not vulnerable (exposed and / or sensitive) to the outcomes of the proposal due to the absence of any reasonable impact pathways).

2.1.14 The screening process has two potential conclusions, namely that a project or plan, alone or in combination with other developments, could result in:

- No LSE on any of the qualifying features of the European site; or,
- LSE identified, or cannot be ruled out, on one or more of the qualifying features of the European site.

2.1.15 Only the second of these outcomes will trigger an AA. If one or more LSE are identified, or cannot be ruled out, it is then necessary to proceed to Stage 2 and undertake an AA.

2.1.16 On 12 April 2018, the Court of Justice of the European Union (CJEU) issued a judgment on Case C323/17 (People over Wind, Peter Sweetman v Coillte Teoranta)[4] which stated (at paragraph 41):

"Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects [mitigation] of the plan or project on that site."

2.1.17 This means that any mitigation relating to protected sites will no longer be considered at the screening stage but taken forward and considered at the AA stage to inform a decision on whether no adverse effects on site integrity can be demonstrated.

2.1.18 The assessment provided within report takes into account the CJEU ruling on 'People over Wind' and the precautionary principle has been applied as per Waddenzee case.

3 INFORMATION TO INFORM THE ASSESSMENT

3.1 Site Description

3.1.1 The Site is located on agricultural land which is of pastoral land use within a rural landscape. The Site is bound by hedgerows with interspersed mature trees and a small stand of non-native coniferous woodland. Within the wider surrounding landscape, habitats include further agricultural fields, pockets of woodland and watercourses including River Cain and The Brogan. The town of Llanfyllin is located *c.* 2.5 km west of the Site.

3.2 Project Description

3.2.1 The Proposed Development comprises the installation and operation of ground mounted solar photovoltaic arrays with all associated works, equipment and necessary infrastructure including site accesses, internal access tracks, security measures, access gates and other ancillary infrastructure and biodiversity enhancements; as presented on the *Proposed Layout Plan.*

[4] Judgment of the Court (Seventh Chamber) of 12 April 2018 People Over Wind and Peter Sweetman v Coillte Teoranta Request for a preliminary ruling from the High Court (Ireland) Case C-323/17

3.2.2 The Proposed Development is not directly connected to or responsible for the management of any European site and is considered to be a 'Project' under the provision of the Habitats Regulations.

3.3 European Sites

3.3.1 A statutory designated site plan is provided as **Figure 1: European Statutory Designated Sites.**

3.3.2 Three European sites of conservation importance for their ecological qualifying features have been identified for screening based on their proximity to the Site (taken as being within a search area of 10 km, extended to 20 km for sites with migratory geese and swan qualifying features and 30 km for sites with mobile bat qualifying features) and/or their connectivity to it (e.g. ecological or hydrological connectivity).

3.3.3 The closest European site is Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy SAC, which is designated for lesser horseshoe bat and *c*. 480 m south of the Site. No additional European statutory designated sites with bat qualifying interest were identified within 30 km of the Site.

3.3.4 No European sites were identified within 20 km of the Site with migratory geese and swan qualifying features.

3.3.5 **Table 3.1** below identifies relevant European sites within 30 km of the Site and outlines their qualifying features, as described within the corresponding *European Site Register Entries* document, presented in **Annex 1**.

Table 3.1: European sites qualifying features.

European Site	Distance and Direction	Qualifying Features
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	Annex II species that are a primary reason for selection of this site: 1303 Lesser horseshoe bat *Rhinolophus hipposideros* 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.
Montgomery Canal SAC	*c.* 7.45 km east	Annex II species that are a primary reason for selection of this site: 1831 Floating water-plantain *Luronium natans* This is the largest and most extensive population of floating water-plantain in Britain and is a highly significant lowland population. In favourable management conditions the species can be dominant over kilometre lengths of canal, carpeting the shallow bed and flowering and seeding in abundance. This is a semi-natural population, having colonised from drift material or seed but needing periodic human disturbance for continued growth; in this respect the canal is a substitute for the species' former slow-moving, mesotrophic river niche, which has been largely destroyed in lowland Britian.
Granllyn SAC	*c.* 8.25 km southeast	Annex II species that are a primary reason for selection of this site:

European Site	Distance and Direction	Qualifying Features
		1166 Great crested newt *Triturus cristatus* This site is centred around a glacial hollow or kettle-hole pool and a historic moat. The surrounding farmland is mostly pasture and rough grassland with good hedges and an area of planted broad-leaved woodland and natural willow scrub to provide suitable foraging habitat. The site is located in eastern Montgomeryshire at the centre of the Welsh distribution for great crested newt. This is the largest known population of the species in central Wales.

3.4 European Site Conservation Objectives

3.4.1 A HRA is required to assess if a project (or plan) is likely to have a significant adverse effect on the conservation objectives of a European site.

3.4.2 The Conservation objectives of a European site are a statement of standards which must be met to maintain (or restore) the qualifying features of the European Site at (or to) "favourable conservation status" (FCS).

3.4.3 As defined the Articles 1(e) and 1(i) of the Habitats Directive, the conservation status will be taken as "favourable" according to the following definitions.

3.4.4 The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas it covers within that range are stable or increasing;
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and,
- The conservation status of its typical species is favourable.

3.4.5 The conservation status of a species will be taken as 'favourable' when:

- Population dynamics data on the species indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and,
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

3.4.6 The Conservation Objectives for each SAC are too long and detailed to be replicated in this document, however, for Wales these can be found in the Core Management Plan (CMP) documents for each site and referenced as follows:

- Core Management Plan Including Conservation Objectives for Tanat and Vyrnwy Bat Sites Special Area of Conservation (Countryside Council for Wales, 2008)[5];

[5] Microsoft Word - Tanat & Vyrnwy Bat Sites SAC MP 15 April 2008 _English_.doc

- Core Management Plan Including Conservation Objectives for Montgomery Canal SAC (& SSSI) (Countryside Council for Wales, 2008)[6]; and,
- Core Management Plan Including Conservation Objectives for Granllyn Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) (Countryside Council for Wales, 2008)[7].

3.5 Baseline Ecological Survey

3.5.1 This assessment has been informed by the following studies and surveys:

- Desk study;
- Extended habitat survey;
- Bat activity surveys (comprising night-time bat walkovers and automated static detectors); and,
- Great crested newt (GCN) surveys.

3.5.2 Survey methodologies and results are presented in the Ecological Appraisal Report (EAR) and associated Appendixes.

3.5.3 Survey methodology and results relating to qualifying features of European Protected Sites qualifying features are summarised below.

Desk Study

Methodology

3.5.4 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.

3.5.5 The desk study included a search for statutory designated sites for nature conservation within 5 km of the Site, extending to 10 km for internationally protected sites, 20 km for internationally protected sites with migratory geese and swan qualifying species and 30 km for internationally protected sites with mobile bat qualifying species.

3.5.6 The search area for European designated sites was extended to 30 km for the HRA due to the presence of European sites with mobile bat qualifying features. This 30 km buffer follows Highways guidance[8] on a precautionary basis, however it is acknowledged that this guidance is specifically for 'a route corridor or project', which is not applicable to the Proposed Development.

Results

3.5.7 A total of four national statutory designated sites are located within 5 km of the Site. 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 SAC. No additional internationally designated sites designated with bat qualifying interest were identified within 30 km of the Site and no

[6] Microsoft Word - Montgomery Canal SAC Management Plan _English.doc (Accessed: 20/03/2026).
[7] Microsoft Word - Granllyn SAC Management Plan 21.4.08 English.doc (Accessed: 20/03/2026).
[8] Standards for Highways (2020). LA 115 Habitats Regulations assessment (formerly HD 44/09) Revision 1. Available at: https://www.standardsforhighways.co.uk (Accessed: 02/03/2026).

internationally designated sites designated with migratory geese and swan were identified within 20 km of the Site.

3.5.8 Detailed results of the desk study are presented within the Ecological Assessment Report (Avian Ecology, 2025a)[9].

Extended Habitat Survey

Methodology

3.5.9 The Site was subjected to an extended habitat survey following UK industry standard UK Habitat (UKHab) Classification Methodology V2.0[10] with reference to the CIEEM, guidance (2017)[11]. The survey covered the Site and a 30 m buffer where access was available.

3.5.10 Habitats on-Site 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).

Results

3.5.11 Habitats on-Site were typical of agricultural land; comprising modified grassland, other coniferous woodland; non-native, native hedgerow, species-rich native hedgerow, lowland mixed deciduous woodland; line of trees and individual trees.

3.5.12 Detailed results of the extended habitat survey are presented within the Ecological Assessment Report (Avian Ecology, 2025a).

Bat Activity Survey

Methodology

Habitat suitability assessment

3.5.13 A habitat suitability assessment was undertaken using data gathered during the extended habitat survey and aerial imagery which provided an appraisal of the potential value of habitats located within the Site relative to foraging, commuting and roosting potential.

Night-time bat walkovers

3.5.14 A total of three night-time bat walkovers (NBW) were undertaken at the Site, with one survey completed during each season of the bat active season (spring, summer and autumn).

Automated bat activity surveys

3.5.15 Monthly automated bat static detector surveys were undertaken at the Site, with two bat statics deployed on-Site for a minimum of five nights per month of the bat active season (April – October, inclusive). Static data collected was analysed using Kaleidoscope software.

[9] Avian Ecology Ltd. (2025a) *Brogan Solar Farm Ecological Assessment Report*.
[10] http://www.ukhab.org (Accessed: 27/11/2025).
[11] CIEEM. (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

3.5.16 All bat surveys followed Bat Conservation Trust (BCT) guidelines (Collins, 2023[12]).

Results

Habitat suitability assessment

3.5.17 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

3.5.18 Seasonally, collective bat activity was highest during the autumn NBW and lowest during the spring NBW. Seasonal activity per individual species showed variation but was generally higher for pipistrelle species during the autumn NBWs. Other species numbers were considered very low across all NBW's.

3.5.19 Lesser horseshoe activity was recorded on-Site, passes were localised in association with the central farm track, lined on both sides with mature hedgerows with trees.

Automated bat activity surveys

3.5.20 Lesser horseshoe was recorded during the automated bat activity surveys with 0.64% of passes recorded, collectively across all automated bat activity surveys, across all months.

3.5.21 Monthly activity per individual species showed variation but was generally higher for most species, including lesser horseshoe, during September.

3.5.22 The individual Bat Activity Index (BAI)[13] for lesser horseshoe ranged from 0.0 – 0.96 passes per hour, peaking at MS2 during September.

3.5.23 Detailed methodology and results of the bat surveys are provided within Bat Activity Survey Report (Avian Ecology, 2025b)[14].

GCN Survey

3.5.24 GCN surveys comprising Habitat Suitability Index (HSI) assessments and environmental DNA (eDNA) surveys were undertaken on two ponds within 250 m of the Site (P1 and P2). HSI assessments followed guidance developed by Oldham *et al.* (2000[15]) and as detailed within ARG UK guidance (ARG UK, 2010[16]).

3.5.25 Both ponds scored average habitat suitability using the HSI. The eDNA survey found both ponds to be positive for the presence of GCN, concluding the presence of GCN within proximity of the Site.

3.5.26 Detailed methodology and results of the GCN surveys are provided within GCN Survey Report (Avian Ecology, 2025c)[17].

[12] Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition). The Bat Conservation Trust, London.
[13] Calculated as BAI (per hour): total number of registered bat calls / total number of recording hours.
[14] Avian Ecology Ltd. (2025b) *Brogan Solar Farm Bat Activity Survey Report.*
[15] 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.
[16] ARG UK (2010) ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. Amphibian and Reptile Groups of the United Kingdom.
[17] Avian Ecology Ltd. (2025c) *Brogan Solar Farm GCN Survey Report.*

4 POTENTIAL FOR LIKELY SIGNIFICANT EFFECTS (SCREENING)

4.1.1 The Proposed Development is not directly connected to or necessary to the conservation management of a European Site, and it is therefore a Project which requires a HRA.

4.1.2 LSE is, in this context, any appreciable effect that may reasonably be predicted as a consequence of a plan or project, which may affect the conservation objectives of the features for which the site was designated but excluding trivial or inconsequential effects.

4.1.3 Where a LSE is identified, further assessment has been undertaken as set out in **Section 5: Appropriate Assessment** of this document to consider the potential for significant adverse effects on the integrity of the European site or its qualifying interest species.

4.1.4 Potential effects are considered during the construction, operation and decommission phases of the Proposed Development. Potential effects are likely to be restricted to the construction and decommissioning phases. During operation of the solar farm, potential effects are envisaged to be minimal. Operational activities will be restricted to occasional maintenance which will not generate significant levels of noise, vibration or lighting that have the potential to cause disturbance. During the decommission phase increased noise and vibration levels are likely to occur during the dismantling of the solar panels and removal of equipment from the Site and are considered to be comparable or lesser to those experienced during construction.

4.2 Potential Effects upon Qualifying Habitat Features and of European Sites

Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrwy SAC

4.2.1 Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy SAC is not designated for Qualifying Habitat Features. The potential for impacts to supporting habitats of qualifying species are discussed separately below.

Montgomery Canal SAC

4.2.2 Montgomery Canal SAC is not designated for Qualifying Habitat Features. The potential for impacts to supporting habitats of qualifying species are discussed separately below.

Granllyn SAC

Granllyn SAC is not designated for Qualifying Habitat Features. The potential for impacts to supporting habitats of qualifying species are discussed separately below.

4.3 Potential Effects upon Qualifying Species of European Sites

Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrwy SAC

4.3.1 Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy SAC is designated due to the presence of the qualifying species: Lesser horseshoe bat. The Proposed Development is physically separated from the SAC by a distance of c. 480 m and as such no direct impacts to lesser horseshoe bat or their roosting, foraging or commuting habitats within the SAC boundaries are anticipated. Similarly, by virtue of this separation distance no indirect impacts to supporting habitats within the SAC boundaries, such as through noise or lighting disturbance, air quality or hydrological impacts, are anticipated.

4.3.2 Lesser horseshoe are however a mobile species and are likely to rely on habitats outside of the SAC boundaries for foraging, commuting and at other stages in their lifecycle, such as for hibernation,

mating or when moving between roosts. Any modification on such supporting habitats could conceivably affect the favourable conservation status of bats associated with the SAC.

4.3.3 The Bat Conservation Trust has identified Core Sustenance Zones (CSZ) for all species of bat present in Britain[18]. The CSZ is defined as: *The area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost.*

4.3.4 Lesser horseshoe bats have a CSZ of 2 km, although may travel further. As such, given the Site is located *c.* 480 m away and the species was recorded foraging and commuting along field boundary features within the Site, it can be considered that on-Site habitats are located within this CSZ, and that impacts from the Proposed Development to lesser horseshoe foraging beyond the SAC boundary are possible.

4.3.5 One potential impact to lesser horseshoe bats in the absence of mitigation includes disturbance from lighting during all phases of the Proposed Development. Lighting may inhibit potential foraging and commuting routes, such as woodland edges, tree lines and hedgerows, within the Site.

4.3.6 The Proposed Development will require the change of land use with the installation of solar arrays and alterations to habitats, including removal and translocation of 11.5m of hedgerow. In the absence of mitigation, impacts to foraging and commuting may occur to the species through these habitat changes.

4.3.7 In the absence of mitigation there is potential for LSE to lesser horseshoe bats, potentially associated with the European Site, through restriction of movement and/or deterring bats from using the Site (i.e. habitat changes and from lighting) which could form part of a commuting route between roosting/hibernation sites and foraging areas. **Therefore, an AA is required.**

Montgomery Canal SAC

4.3.8 Montgomery canal SAC is designated due to the presence of the qualifying species: floating water-plantain.

4.3.9 The Proposed Development does not form part of any European site as such there would be no direct loss of or change to supporting habitat of designated species features within the SAC.

4.3.10 Whilst present within the locality, no watercourses are located within the Site. The nearest watercourse, The Brogan, is located *c.* 50 m away from the Site at its closest point. As such, there is a lack of hydrological connectivity between the Site and the European Site. Furthermore, the European site is suitably distanced from the Site (*c.* 7.45 km) that any indirect impacts on the European site as a result of the Proposed Development is unlikely.

4.3.11 Regardless of the proximity to any European Site, the Scheme would be required to implement standard legislative and regulatory requirements to prevent pollution including Guidance for Pollution Prevention (GPPs) as part of embedded tertiary measures.

It is unlikely that a LSE will occur to the habitats present at Montgonery Canal SAC as a result of the Proposed Development; **therefore, an AA is not required.**

Granllyn SAC

4.3.12 Granllyn SAC is designated due to the presence of the qualifying species: GCN.

[18] https://www.bats.org.uk/our-work/landscapes-for-bats/core-sustenance-zones (Accessed: 20/03/2026).

4.3.13 The Proposed Development does not form part of any European site as such there would be no direct loss of or change to supporting habitat of designated species features within the SAC.

4.3.14 The results of the GCN surveys identified the presence of GCN within two ponds located within 250 m of the Site. As detailed within the GCN mitigation guidelines (English Nature, 2001)[19], GCN are known to commonly move between ponds located within 250 m of each other; in some scenarios GCN have been known to move considerable distances of up to 1.3 km from breeding sites, however distribution of GCN to such distances are considered rare.

4.3.15 Therefore, due to the distance (*c.* 8.25 km) and lack of ecological connectivity between the Site and Granllyn SAC, GCN populations associated with the Site and those associated with the SAC would not interact. Similarly, works within the Site (e.g., vegetation clearance) have no potential to affect GCN populations associated with Granllyn SAC.

4.3.16 Therefore, it is considered that no LSE will occur to qualifying GCN features present at Granllyn SAC as a result of the Proposed Development; **therefore, an AA is not required.**

4.4 Screening Conclusion

4.4.1 In the absence of mitigation, an AA is required to be made under the Habitats Regulations in relation to Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy SAC before the Competent Authority can give any consent, permission or other authorisation for the Proposed Development.

4.4.2 The Proposed Development is considered alone to have potential for LSE upon the aforementioned designated sites above in relation to its potential to cause indirect effects upon qualifying species.

4.4.3 LSE are considered in relation to the construction, operation and decommissioning phases of the Proposed Development.

5 APPROPRIATE ASSESSMENT

5.1 Overview

5.1.1 In the absence of mitigation, the potential for LSEs is identified for the following European sites as a result of the Proposed Development:

- Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy SAC
    - Lesser horseshoe bats

5.1.2 This section of the report therefore considers the potential for adverse effects upon the integrity of the above European sites, in view of the site's conservation objectives and on the basis of mitigation measures.

5.1.3 Consideration of measures included within a Project which have the effect of reducing or mitigating the effects of that Project on a European site have not been considered within Stage 1: Screening but must instead be assessed with respect to the integrity of the site concerned at Stage 2: Appropriate Assessment.

[19] English Nature (2001). *Great Crested Newt Mitigation Guidelines.*

5.1.4 The Adverse Effect on Integrity Test undertaken in the Appropriate Assessment can take account of the protection measures forming part of the integral design or physical characteristics of the project aimed at avoiding or reducing any direct adverse effects for the site.

5.1.5 In the absence of mitigation, the Project has the potential to affect the integrity of the aforementioned designated sites during construction, operation or decommissioning.

5.1.6 The following section details the mitigation measures included within the design of the Project, which will also be set out in a Construction Environmental Management Plan (CEMP), secured by planning consent and then an assessment of LSE in consideration of these measures is undertaken.

5.2 Mitigation During Construction

5.2.1 The following measures are proposed to mitigate for LSE during construction of the Proposed Development. For completeness, some embedded measures required for legislative compliance (e.g., pollution prevention measures) are repeated here however should not be considered as specific measures to reduce any potential LSE.

Construction Environmental Management Plan (CEMP)

5.2.2 A CEMP can be secured by a suitably worded condition. The below presents the outline approach to and the application of environmental management and mitigation for the construction of the Proposed Development.

Pollution Prevention Measures

5.2.3 The CEMP will include best practice and regulatory pollution prevention measures including adherence to GPPs.

Sensitive Lighting Design

5.2.4 The embedded CEMP will include general best practice measures to minimise light spill and a sensitive lighting design should follow industry standard guidelines (BTC, 2023[20]). Temporary mobile lighting towers may be required at construction compounds during the winter months to comply with health and safety requirements. Construction operations would be limited to 08.00 to 18.00hrs Monday to Friday and 08:00 to 13:00hrs Saturday (with the proposed hours controlled via a planning condition); darkness would not occur during working hours other than during the period between approximately mid-October and mid-March. As such, the period in which this lighting may be required would broadly coincide with the period in which lesser horseshoe would be hibernating (i.e. September/October until April and frequently into May[21]) and so is unlikely to disrupt foraging or commuting routes. In line with standard best practice, lighting would be directed away from boundary features and fitted with directional fitting such as cowls and hoods to minimise light spill to boundary features. Construction lighting is considered unlikely to affect lesser horseshoe bats.

5.3 Mitigation During Operation

Sensitive Lighting Design

5.3.1 During operation the Scheme would not be routinely lit, with emergency lighting only located at areas such as the substation. Emergency lighting would be operated either by infrared motion detector or manually operated and used only rarely in the event out-of-hours maintenance is required. Similarly to construction lighting, lighting would be directed away from boundary features and fitted with

[20] Bat Conservation Trust (2023) *Bats and Artificial Lighting at Night*. Institute of lighting professionals.
[21] https://www.bats.org.uk/about-bats/what-are-bats/uk-bats/lesser-horseshoe (Accessed: 20/03/2026).

directional fitting such as cowls and hoods to minimise light spill to boundary features and as such is considered to have negligible impacts on lesser horseshoe bats.

Solar Array and Land Use Alteration

5.3.2 Emerging evidence (Tinsley *et al.* 2023[22]) suggests that the presence of solar arrays may affect bat activity in some species, and therefore potential effects of panels on lesser horseshoe bats have been investigated and are discussed below.

5.3.3 While studies into the effects of solar arrays on bats activity are at this time limited, with regards to lesser horseshoe bats, Tinsley *et al.* (2023) excluded the species from statistical analysis due to low sample sizes found. Therefore, the study could not determine any effects resulting from the presence of solar panels on the species. Nonetheless, measures suggested in this paper have been incorporated into the embedded scheme design, including buffers from boundary features and planting to improve overall foraging resource. Further, extensive tree, scrub and hedgerow planting (including 5 m to 10 m wide wildflower margin buffers) is proposed to strengthen and enhance bat foraging and commuting routes within the Site and the immediately surrounding landscape.

5.3.4 The design of the infrastructure will ensure that boundary habitats are largely retained with an enhanced vegetative buffer, which is considered to benefit bats present within the locale, including lesser horseshoe. This notably includes a 10 m perimeter buffer and an open meadow adjacent to the sides of an on-Site double hedgerow (with trees) that is considered to act as a wildlife corridor for bats (including lesser horseshoe bats) within the Site and wider area. This 10 m buffer on the north-western side of the hedgerow and the open meadow on the south-eastern side of the hedgerow are both proposed to be converted to species-diverse wildflower grassland, with the hedgerow itself enhanced with additional planting, in order to improve bat commuting and foraging opportunities along this feature.

5.3.5 Whilst the results of the bat activity surveys show that lesser horseshoe bats utilise the Site for foraging and commuting opportunities, the species is known to favour woodland edge and field boundary habitats. It is therefore considered that the loss of open habitats will not impact lesser horseshoe bat populations associated with Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy SAC, and that the enhancement of boundary habitats will be beneficial to the species.

5.3.6 Some small-scale temporary loss of hedgerows will be required in order to facilitate access (11.5 m hedgerow section), however due to the small extent of this it is expected to have negligible impact on foraging and commuting routes. Surveys recorded localised lesser horseshoe activity in association with the central farm track, lined on both sides with mature hedgerow with trees, rather than along the western hedgerow situated alongside the main road. This hedgerow is proposed to be translocated within the Site, with the removed area reinstated with newly planted hedgerow following the construction phase. This limited hedgerow translocation / removal is considered inconsequential to lesser horseshoe, and unlikely to disrupt any flight paths.

5.4 Mitigation During Decommissioning

5.4.1 The mitigation employed during the decommissioning phase would be expected to be similar to that used during the construction phase. Decommissioning would be undertaken in an environmentally sensitive manner and be subject to a Decommissioning Environmental Management Plan (DEMP).

[22] Tinsley, E., Froidevaux, J. S. P., Zsebők, S., Szabadi, K. L., & Jones, G. (2023). *Renewable energies and biodiversity: Impact of ground-mounted solar photovoltaic sites on bat activity*. Journal of Applied Ecology, 60, 1752–1762. Available at: https://doi.org/10.1111/1365-2664.14474 (Accessed: 20/03/2026).

5.4.2 It is anticipated that during decommissioning, that a further 11.5 m of hedgerow may be required for removal in the same access location. If required, this hedgerow would be replaced with newly planted hedgerow.

5.4.3 At the point of full or partial decommissioning of the Proposed Development, the CEMP developed during the construction phase will provide guidance for the management of risk to the environment. The CEMP would be reviewed and updated as appropriate to reflect future good practice guidance (along with any changes in legislation, climate, designations, habitats or water use) and used to plan decommissioning activity (i.e. the DEMP).

5.5 Appropriate Assessment

5.5.1 In the absence of mitigation, potential for LSE on the Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy SAC have been identified.

5.5.2 With the implementation of mitigation measures including the CEMP and project design measures, it can be concluded that the Proposed Development will not result in adverse effects upon the integrity of any European site.

5.5.3 The mitigation measures proposed are well established and in line with guidance and regulation and hence can be considered achievable and effective in preventing identified potential adverse effects. The mitigation will be secured by planning condition within the planning consent as part of the final CEMP.

5.5.4 With the inclusion of the mitigation outlined, LSE on the integrity of the Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy SAC would be avoided and subsequently **no adverse effects on the integrity of any European sites, or its qualifying species will occur.**

5.6 Appropriate Assessment of Effects In-combination

5.6.1 Regulation 63 requires that the HRA process must consider the potential for LSEs of a proposed development either alone or in combination with other plans and projects. In-combination effects are subsequently considered to be restricted to potential direct effects from habitat loss and/or change and indirect effects of contamination/sedimentation/pollution with all other potential effects inconsequential on the European sites.

5.6.2 In-combination effects must be:

- practically feasible; and,
- interpreted and applied in a proportionate manner.

5.6.3 No additional planning applications with similar proposed schemes, have been identified adjacent or within the wider vicinity of the Site.

5.6.4 No additional renewable energy planning applications have been identified adjacent or within 10 km of the Site, therefore no further planning applications have been considered within the AA of Effects in-combination.

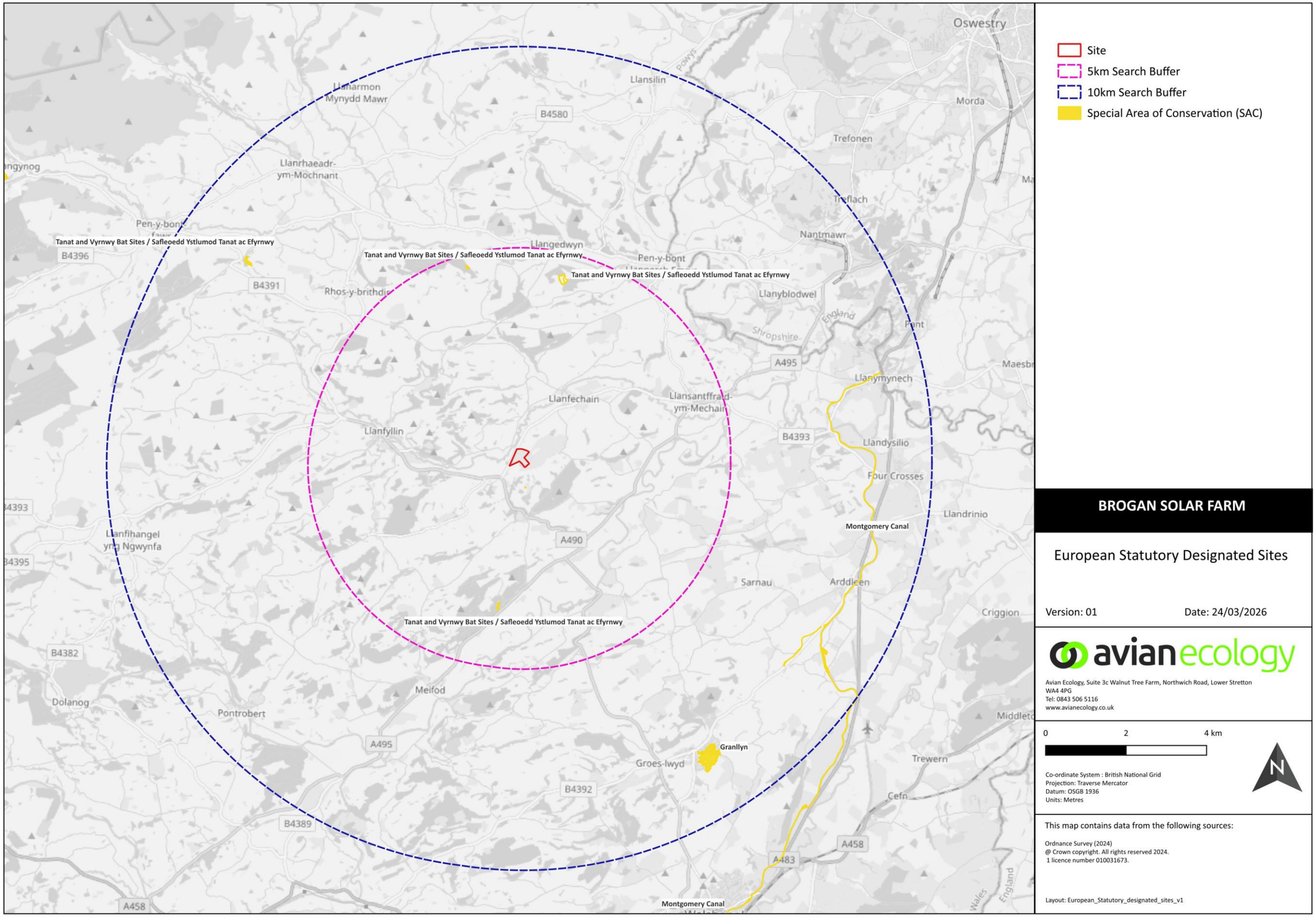
6 CONCLUSION

6.1.1 LSEs have been identified on the European sites and information to inform an AA has been provided, including mitigation measures that will form a committed part of the Project.

6.1.2 The mitigation measures as described will ensure no direct or indirect effects on the favourable conservation status of qualifying species or habitats and hence no effects on the integrity of the European sites.

6.1.3 The mitigation measures proposed are well established and in line with guidance and regulation and hence can be considered to be achievable and effective in preventing identified potential adverse effects. The mitigation will be secured by planning condition within the planning consent as part of a CEMP.

FIGURE 1: EUROPEAN STATUTORY DESIGNATED SITES



ANNEX 1 - CITATIONS

Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy SAC

Conservation (Natural Habitats, &c.) Regulations 1994 (SI 1994 No. 2716), fel y'u diwygiwyd / as amended.

COFNOD YN Y GOFRESTR O SAFLEOEDD EWROPEAIDD I GYMRU

ENTRY IN THE REGISTER OF EUROPEAN SITES FOR WALES

(Rheoliad / Regulation 11.2)

***ENW'R SAFLE*:**
***SITE NAME*:** Tanat and Vyrnwy Bat Sites / Safleoedd Ystlumod Tanat ac Efyrnwy

***MATH O SAFLE*:** Ardal Cadwraeth Arbennig (ACA)
***SITE TYPE*:** Special Area of Conservation (SAC)

***CÔD Y SAFLE*:**
***SITE CODE*:** UK0014783

***HANES DYNODIAD*:**

***Dyddiad y trosglwyddwyd i'r Comisiwn Ewropeaidd (Rheoliad 7.4)*:**
Hydref 2002

***Dyddiad y mabwysiadwyd fel safle o bwysigrwydd cymunedol (Council Directive 92/42/EEC, Erthygl 4.2)*:**
7 Rhagfyr 2004

***Dyddiad dynodi*:**
13 Rhagfyr 2004

***Dynodwyd gan (Rheoliad 8.1)*:**
Cynulliad Cenedlaethol Cymru

***LLEOLIAD*:**

Awdurdod unedol:
Powys

***Cyfesurynnau*:**
Hydred 03 24 48 Gor, Lledred 52 49 21 Gog
Cyfeirnod Grid Cenedlaethol Arolwg Ordnans: SJ047259

Gweler hefyd y map(iau) amgaeëdig, nad ydynt yn ffurfio rhan o'r cofnod hwn.

***DESIGNATION HISTORY*:**

***Date transmitted to the European Commission (Regulation 7.4)*:**
Hydref 2002

Date adopted as a site of community importance (Council Directive 92/42/EEC, Article 4.2):
7 December 2004

***Date designated*:**
13 December 2004

Designated by (Regulation 8.1):
National Assembly for Wales

***LOCATION*:**

Unitary authority:
Powys

***Coordinates*:**
Longitude 03 24 48 W, Latitude 52 49 21 N
Ordnance Survey National Grid Reference: SJ047259

See also the accompanying map(s), which do not form part of this entry.

ANNEX 1 - CITATIONS

MATHAU O GYNEFIN A/NEU RYWOGAETHAU Y DYNODIR Y SAFLE O'U PLEGID:
HABITAT TYPES AND/OR SPECIES FOR WHICH THE SITE IS DESIGNATED:

		Enw cyffredin	Common name	Term Gwyddonol	Scientific term
1		Ystlum trwyn pedol lleiaf	Lesser horseshoe bat	*Rhinolophus hipposideros*	

*Mae'n dynodi mathau o gynefin neu rywogaeth y rhoddir blaenoriaeth iddynt (a ddiffinnir yn Erthyglau 1(d) ac 1(h) o Council Directive 92/43/EEC).

*Denotes a priority habitat type or species (defined in Articles 1(d) and 1(h) of Council Directive 92/43/EEC).

GWNAED Y COFNOD HWN:
14 Mehefin 2005

THIS ENTRY MADE:
14 June 2005

GAN:
Trish Fretten, ar ran Gweinidog dros yr Amgylchedd, Cynllunio a Chefn Gwlad, Cynulliad Cenedlaethol Cymru

BY:
Trish Fretten, on behalf of the Minister for Environment, Planning and Countryside, National Assembly for Wales

LLOFNOD:

SIGNATURE:

DYDDIAD(AU) COFNODION BLAENOROL AR GYFER Y SAFLE HWN:
Dim

DATE(S) OF PREVIOUS ENTRIES FOR THIS SITE:
None

ANNEX 1 - CITATIONS

Montgomery Canal SAC

Conservation (Natural Habitats, &c.) Regulations 1994 (SI 1994 No. 2716), fel y'u diwygiwyd / as amended.

COFNOD YN Y GOFRESTR O SAFLEOEDD EWROPEAIDD I GYMRU

ENTRY IN THE REGISTER OF EUROPEAN SITES FOR WALES

(Rheoliad / Regulation 11.2)

***ENW'R SAFLE*:**
***SITE NAME*:** Montgomery Canal

***MATH O SAFLE*:** Ardal Cadwraeth Arbennig (ACA)
***SITE TYPE*:** Special Area of Conservation (SAC)

***CÔD Y SAFLE*:**
***SITE CODE*:** UK0030213

***HANES DYNODIAD*:**

***Dyddiad y trosglwyddwyd i'r Comisiwn Ewropeaidd (Rheoliad 7.4)*:**
Hydref 2002

***Dyddiad y mabwysiadwyd fel safle o bwysigrwydd cymunedol (Council Directive 92/42/EEC, Erthygl 4.2)*:**
7 Rhagfyr 2004

***Dyddiad dynodi*:**
13 Rhagfyr 2004

***Dynodwyd gan (Rheoliad 8.1)*:**
Cynulliad Cenedlaethol Cymru

***LLEOLIAD*:**

Awdurdod unedol:
Powys

***Cyfesurynnau*:**
Hydred 03 06 56 Gor, Lledred 52 40 57 Gog
Cyfeirnod Grid Cenedlaethol Arolwg Ordnans: SJ245100

Gweler hefyd y map(iau) amgaeëdig, nad ydynt yn ffurfio rhan o'r cofnod hwn.

***DESIGNATION HISTORY*:**

***Date transmitted to the European Commission (Regulation 7.4)*:**
October 2002

Date adopted as a site of community importance (Council Directive 92/42/EEC, Article 4.2):
7 December 2004

***Date designated*:**
13 December 2004

Designated by (Regulation 8.1):
National Assembly for Wales

***LOCATION*:**

Unitary authority:
Powys

***Coordinates*:**
Longitude 03 06 56 W, Latitude 52 40 57 N
Ordnance Survey National Grid Reference: SJ245100

See also the accompanying map(s), which do not form part of this entry.

ANNEX 1 - CITATIONS

MATHAU O GYNEFIN A/NEU RYWOGAETHAU Y DYNODIR Y SAFLE O'U PLEGID:
HABITAT TYPES AND/OR SPECIES FOR WHICH THE SITE IS DESIGNATED:

		Enw cyffredin	Common name	Term Gwyddonol	Scientific term
1		Llyriad nofiadwy	Floating water-plantain	*Luronium natans*	

*Mae'n dynodi mathau o gynefin neu rywogaeth y rhoddir blaenoriaeth iddynt (a ddiffinnir yn Erthyglau 1(d) ac 1(h) o Council Directive 92/43/EEC).

*Denotes a priority habitat type or species (defined in Articles 1(d) and 1(h) of Council Directive 92/43/EEC).

***GWNAED Y COFNOD HWN*:**
14 Mehefin 2005

***THIS ENTRY MADE*:**
14 June 2005

***GAN*:**
Trish Fretten, ar ran Gweinidog dros yr Amgylchedd, Cynllunio a Chefn Gwlad, Cynulliad Cenedlaethol Cymru

***BY*:**
Trish Fretten, on behalf of the Minister for Environment, Planning and Countryside, National Assembly for Wales

***LLOFNOD*:**

***SIGNATURE*:**

***DYDDIAD(AU) COFNODION BLAENOROL AR GYFER Y SAFLE HWN*:**
Dim

***DATE(S) OF PREVIOUS ENTRIES FOR THIS SITE*:**
None

ANNEX 1 - CITATIONS

Granllyn SAC

Conservation (Natural Habitats, &c.) Regulations 1994 (SI 1994 No. 2716),
fel y'u diwygiwyd / as amended.

COFNOD YN Y GOFRESTR O SAFLEOEDD EWROPEAIDD I GYMRU

ENTRY IN THE REGISTER OF EUROPEAN SITES FOR WALES

(Rheoliad / Regulation 11.2)

***ENW'R SAFLE*:**
***SITE NAME*:** Granllyn

***MATH O SAFLE*:** Ardal Cadwraeth Arbennig (ACA)
***SITE TYPE*:** Special Area of Conservation (SAC)

***CÔD Y SAFLE*:**
***SITE CODE*:** UK0030158

***HANES DYNODIAD*:**

***Dyddiad y trosglwyddwyd i'r Comisiwn Ewropeaidd (Rheoliad 7.4)*:**
Gorffennaf 2004

***Dyddiad y mabwysiadwyd fel safle o bwysigrwydd cymunedol (Council Directive 92/42/EEC, Erthygl 4.2)*:**
7 Rhagfyr 2004

***Dyddiad dynodi*:**
13 Rhagfyr 2004

***Dynodwyd gan (Rheoliad 8.1)*:**
Cynulliad Cenedlaethol Cymru

***LLEOLIAD*:**

Awdurdod unedol:
Powys

***Cyfesurynnau*:**
Hydred 03 09 01 Gor, Lledred 52 41 42 Gog
Cyfeirnod Grid Cenedlaethol Arolwg Ordnans: SJ224117

Gweler hefyd y map(iau) amgaeëdig, nad ydynt yn ffurfio rhan o'r cofnod hwn.

***DESIGNATION HISTORY*:**

***Date transmitted to the European Commission (Regulation 7.4)*:**
July 2004

Date adopted as a site of community importance (Council Directive 92/42/EEC, Article 4.2):
7 December 2004

***Date designated*:**
13 December 2004

Designated by (Regulation 8.1):
National Assembly for Wales

***LOCATION*:**

Unitary authority:
Powys

***Coordinates*:**
Longitude 03 09 01 W, Latitude 52 41 42 N
Ordnance Survey National Grid Reference: SJ224117

See also the accompanying map(s), which do not form part of this entry.

ANNEX 1 - CITATIONS

MATHAU O GYNEFIN A/NEU RYWOGAETHAU Y DYNODIR Y SAFLE O'U PLEGID:
HABITAT TYPES AND/OR SPECIES FOR WHICH THE SITE IS DESIGNATED:

		Enw cyffredin	Common name	Term Gwyddonol	Scientific term
1		Y fadfall ddŵr gribog	Great crested newt	*Triturus cristatus*	

*Mae'n dynodi mathau o gynefin neu rywogaeth y rhoddir blaenoriaeth iddynt (a ddiffinnir yn Erthyglau 1(d) ac 1(h) o Council Directive 92/43/EEC).

*Denotes a priority habitat type or species (defined in Articles 1(d) and 1(h) of Council Directive 92/43/EEC).

GWNAED Y COFNOD HWN:
14 Mehefin 2005

THIS ENTRY MADE:
14 June 2005

GAN:
Trish Fretten, ar ran Gweinidog dros yr Amgylchedd, Cynllunio a Chefn Gwlad, Cynulliad Cenedlaethol Cymru

BY:
Trish Fretten, on behalf of the Minister for Environment, Planning and Countryside, National Assembly for Wales

LLOFNOD:

SIGNATURE:

DYDDIAD(AU) COFNODION BLAENOROL AR GYFER Y SAFLE HWN:
Dim

DATE(S) OF PREVIOUS ENTRIES FOR THIS SITE:
None