



Ecological Appraisal Report:

**Y Tydyn Teg,
Heol y Nant,
Llannon,
Llanelli,
Carms,
SA14 6BY**

Version Number	Date Issued
1.0	17/11/2023

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Summary

I & G Ecological Consulting Ltd were commissioned to undertake a preliminary ecological appraisal of an area of land, approximately 3 hectares in size, hereafter referred to as 'the site'. The site is located off Heol y Nant to the north-west of Llannon. The preliminary ecological appraisal was undertaken in order to determine the ecological baseline of the site, as well as to identify any ecological constraints necessary for informing the design of an ongoing planning application. The proposed development consists of the construction of a solar array.

A desk study was undertaken in November 2023, with the purpose of determining any existing ecological information pertaining to the proposed development, as well as surrounding habitats. A Phase 1 Habitat Survey was undertaken in November 2023, with the aim of identifying the habitats present on site and relating them to any relevant legislation.

The site consists of semi-improved grassland, marshy grassland, hedgerow, scrub and waterbodies.

This report presents the findings of the aforementioned desk study, and site appraisal undertaken in November 2023. The report aims to identify any ecological constraints present in relation to the proposed development, such as the presence of protected species and habitats, whilst providing recommendations for further surveys and mitigation measures where required.

1. INTRODUCTION

1.1 Background

I & G Ecological Consulting Ltd were commissioned to undertake a preliminary ecological appraisal of an area of land, approximately 3 hectares in size, hereafter referred to as 'the site'. The site is located off Heol y Nant to the north-west of Llanon. The preliminary ecological appraisal was undertaken in order to determine the ecological baseline of the site, as well as to identify any ecological constraints, necessary for informing the design of an ongoing planning application. The proposed development consists of the construction of a solar array.

This report presents the findings of both a desk study, and a site appraisal undertaken in November 2023. The report aims to identify any ecological constraints present in relation to the proposed development, such as the presence of protected species and habitats, whilst providing recommendations for further surveys and mitigation measures where required.

1.2 Site Details

The site is located to the north-west of Llanon off Heol y Nant, and is surrounded by farmland.

The site is located centrally at SN 54585 09111, and comprises a mixture of semi-improved grassland, marshy grassland, scrub, hedgerow, ditches and pond.



Figure 1. Site Location.

1.3 Proposed Development

The proposed development comprises of the construction of a solar array.

1.4 Relevant Planning Policy and Legislation

- 1.4.1 The Environment Wales Act (EWA) Section 6 (Welsh Government, 2016) places a duty on public authorities to 'seek to maintain and enhance biodiversity' and seek to 'promote the resilience of ecosystems'. The duty replaces the Section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty. Section 7 lists both Priority Species and Habitats of Principle Importance for the purpose of maintaining and enhancing biodiversity in relation to Wales.
- 1.4.2 Furthermore, Edition 11 of Planning Policy Wales (PPW) (Welsh Government, 2011) establishes the land use planning policy for Wales, as set forth by the Welsh Government. It provides a structure for the effective formulation of Local Planning Authorities' development plans, supported by twenty-one Technical Advice Notes (TANs) organized around different topics. Specifically, TAN 5 - Nature Conservation and Planning gives guidance on how the land use planning system should support the safeguarding and enhancement of biodiversity and geological conservation.

PPW 11 aims to maintain and establish areas where:

- The role of landscapes, historic environments, habitats, biodiversity, and the unique characteristics of coastal, rural, or urban environments in contributing to natural and distinctive places are recognised, appreciated, protected, and improved.
- Further fragmentation of habitats is avoided wherever possible, and green networks, corridors, and habitat connections within developed areas are protected and improved.
- The features and characteristics of sites designated for their landscape or nature conservation significance are fully evaluated and safeguarded, while the network of sites is acknowledged as the foundation for improving the resilience of ecosystems.
- The opportunity to enhance the resilience of ecosystems is seized in all areas by addressing issues such as building on floodplains, diffuse pollution, soil compaction and sealing, ensuring the protection of peat resources, and improving coastal flood defense strategies in urban areas and coastal margins.

Paragraph 3.36 of PPW outlines the utilization of the Sustainable Management of Natural Resources (SMNR) methodology by the planning system, with the following identified as its primary components:

- Improving the resilience of ecosystems and ecological networks
- Halting and reserving the loss of biodiversity

- Maintaining and enhancing green infrastructure based on seeking multiple ecosystem benefits.

The production of Carmarthenshire County Council's Revised LDP covering the period 2018 - 2033 has been delayed due to the publication of new targets by Natural Resources Wales which seek to reduce river phosphate levels in riverine Special Areas of Conservation (SAC) across Wales. Once adopted (completed), the Revised LDP will be used as the basis for determining planning applications and will assist in guiding future investment programmes in areas such as infrastructure, as well as Plans and strategies, including those of partner organisations. Until the Revised LDP is adopted, the existing 2006-2021 LDP will remain in place for all planning decisions, in line with advice issued by the Welsh Government. The Carmarthenshire Local Development Plan (LDP) was adopted at the meeting of the County Council on the 10th December 2014. The LDP sets out the spatial vision for the future of Carmarthenshire (excluding that area within the Brecon Beacons National Park) and a framework for the distribution and delivery of growth and development.

It sets out land-use planning policies and proposals which are used in the determination of planning applications and in guiding future opportunities for investment and growth. These policies include land-use allocations for different types of development (i.e., housing, employment, retailing, education, open space etc.) as well as criteria for assessing individual proposals. The Plan has a direct effect on the lives of every resident of the County as well as major implications on investment programmes, other plans and strategies, communities and landowners alike.

Under the Future Wales: The National Plan 2040 (Welsh Government, 2021), development should 'Safeguard areas for the purposes of improving the resilience of ecological network and ecosystems services, to identify areas for the provision of green infrastructure and to secure biodiversity enhancement (net benefit)'.

Policies EQ3 and EQ4 refer to designated sites of ecological importance, and habitats / species respectively, and as such are of relevance to the following report (Table 1).

Policy EQ3 Regional and Local Designations

Proposals for development that are likely to cause unacceptable harm to a Local Nature Reserve (LNR), or Regionally Important Geological/Geomorphological Sites (RIGS) will only be permitted where the need to safeguard the substantive nature conservation value of the site or feature is clearly outweighed by the reasons for the development or land use change.

The designation of such sites will, where appropriate, be supported.

Strategic Objectives Supported: SO1, SO4, SO5, SO6, SO7 and SO8
<i>This policy should be read in conjunction with other relevant policies and proposals of this LDP.</i>

Policy EQ4 Biodiversity

Proposals for development which have an adverse impact on priority species, habitats and features of recognised principal importance to the conservation of biodiversity and nature conservation, (namely those protected by Section 42 of the Natural Environment and Rural Communities (NERC) Act 2006 and UK and Local BAP habitats and species and other than sites and species protected under European or UK legislation) will not be permitted, except where it can be demonstrated that:

- a. The impacts can be satisfactorily mitigated, acceptably minimised or appropriately managed to include net enhancements;**
- b. There are exceptional circumstances where the reasons for the development or land use change clearly outweighs the need to safeguard the biodiversity and nature conservation interests of the site and where alternative habitat provision can be made in order to maintain and enhance local biodiversity.**

Strategic Objectives Supported: SO1, SO4, SO5, SO6, SO7 and SO8
<i>This policy should be read in conjunction with other relevant policies and proposals of this LDP.</i>

Table 1. Specific Policies EQ3 & EQ4 Carmarthenshire LDP 2006-2021

2. METHODOLOGY

2.1 Desk Study

A desk study was conducted with the purpose of determining any existing ecological information pertaining to the proposed development site, as well as surrounding habitats. A biological data request was sent to Local Environmental Records Centre (LERC) Wales via Aderyn (available at: <https://aderyn.lercwales.org.uk/>) and returned on the 10th November 2023, in order to obtain records of protected species within a 2km radius of the site, as well as designated sites for nature conservation. Additional species record data were obtained via the National Biodiversity Network (NBN) Atlas (available at: <https://nbnatlas.org/>) where possible. The Multi-Agency Geographical Information for the Countryside (MAGIC) website was also used to pull data on waterbodies within 0.25km of the site, following the guidance listed in the Great Crested Newt Conservation Handbook (Langton *et al.*, 2001).

2.2 Field Survey

2.2.1 Phase One Habitat Survey

A Phase One Habitat Survey was conducted by a suitably qualified ecologist on 10/11/2023, using the methodology outlined in the Handbook for Phase 1 habitat survey (JNCC, 2010). Additionally, the habitats present on site were assessed for their potential to support protected species, with visual surveys used to search for physical sightings, or incidental records of such species e.g.

- Evidence of badger – setts, well-worn paths and runs, snagged hair, latrines, sites and foraging.
- Evidence of otter - spraint marking, slides, hovers or sites.
- Evidence of dormouse – nests or foraged hazel nuts with characteristic round gnawing holes.
- Evidence of birds – nests.
- Evidence of bats – bat droppings or urine staining adjacent to a Potential Roost Feature (PRF).
- Evidence of reptile – sloughs.
- Evidence of amphibians – spawn.
- Evidence of water vole – droppings, latrines, foraging signs and footprints.
- Suitable habitat for marsh fritillary butterfly – the presence of Devil's bit scabious (*Succisa pratensis*), the marsh fritillary's food plant.

Any invasive non-native plant species listed under Schedule 9, Section 14 of the Wildlife and Countryside Act 1981 (as amended) were also noted and mapped during the site survey.

The site boundary is included in Figure 2 below.



Figure 2. Approximate Site Boundary

2.3 Limitations

It should be noted that the lack of a record for a particular species within the LRC search buffer does not indicate its absence in or adjacent to the site.

The findings presented within this report are valid for an 18-month period following the survey, in line with CIEEM (2019) guidance. Should the scope of the proposed development change in any way, then an updated Preliminary Ecological Appraisal will be required.

3. DESK STUDY

A number of protected and notable species records were returned within 2km of the centre of the proposed development site. All records will not be listed here, however the most significant, those which are considered to potentially be affected by the development of the site, will be briefly summarised. The full data set is available upon request to those nominated on the request form, as some data may be classified as sensitive. The significant findings from the data search are summarised below and in Appendices A and B.

3.1 Birds

The data search returned 74 entries of birds within 2 km of the site ordered nearest to furthest below:

Priority species:

Red kite, dunnoek, barn owl, crossbill, fieldfare, wryneck, redwing, brambling, and lapwing. The nearest record of red kite returned was 0.42km from the site.

Protected species under Section 7 of Principal Importance under the Environment (Wales) Act 2016:

House sparrow, song thrush, starling, cuckoo, tree pipit, bullfinch, marsh tit, lesser redpoll, kestrel, spotted flycatcher, grasshopper warbler, reed bunting, skylark, willow tit, and linnet. The nearest records of house sparrow and song thrush were 0.84km from the site.

3.2 Mammals

The data search returned 144 entries of mammals within 2km of the site ordered nearest to furthest below:

Priority species:

Whiskered bat, myotis bat, Daubenton's bat, natterer's bat, badger, weasel, chiroptera, and roe deer. The nearest record of whiskered bat was reported 0.20km from the site. Myotis, Daubenton's, and natterer's were reported within 0.57km of the site.

Protected species under Section 7 of Principal Importance under the Environment (Wales) Act 2016:

Hazel dormouse, common pipistrelle, soprano pipistrelle, brown long-eared bat, hedgehog, brown hare, otter, and water vole. Most notably, the nearest report for dormouse was 0.15km from the site, with 74 reports overall within 2 km, and closest report of common pipistrelle at 1.78km with 39 reports overall within the 2km. 1 report of otter was returned within 1.6km of the site, however a further 10 reports were returned between 2.08-2.5km away. Water vole was reported once at 1.8km from the site.

3.3 Invertebrates

The data search returned 74 entries of invertebrates (moths, butterflies and beetles) within 2km of the site, ordered from nearest to furthest below:

Priority species:

Pearl bordered fritillary, small square-spot moth.

Protected species under Section 7 of Principal Importance under the Environment (Wales) Act 2016: Small pearl-bordered fritillary butterfly, small heath, marsh fritillary butterfly, powdered quaker moth, brindled beauty moth, white ermine moth, blood-vein moth, cinnabar moth, dark-barred twin-spot carpet moth, knot grass moth, broom moth, latticed heath moth, small phoenix moth, buff ermine moth, oblique carpet moth, and dingy skipper. The nearest record of small pearl-bordered fritillary was 0.54km from the site. However most notable of these being marsh fritillary showed 15 counts with the closest being 1.07km from the site and a further 24 records outside the 2km area.

3.4 Plants

The data search returned 18 entries of plants which are categorised as priority species under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) within 2km of the site. All 18 of these reports were for blue bell. The nearest record of bluebell returned was 0.97km from the site.

3.5 Reptiles

The data search returned 8 entries of reptiles which are categorised as protected species under Section 7 of Principal Importance under the Environment (Wales) Act 2016) within 2km of the site: common lizard, adder, grass snake and slow-worm. The nearest record of common lizard returned was 0.95km from the site.

3.6 Amphibians

The data search returned 2 entries of amphibians which are categorised as priority species (listed in Schedule 5 of the Wildlife and Countryside Act, 1981 within 2km of the site, comprising of palmate newt and common frog. The nearest record for palmate newt was shown to be 1.05km from the site.

3.7 Invasive Non-native species

The data search returned 50 records of invasive non-native species within 2 km of the site, listed under Schedule 9 of the Wildlife and Countryside Act, 1981. These are listed nearest to furthest:

Montbretia, American mink, rhododendron, cherry laurel, Japanese knotweed, Himalayan honeysuckle, Jenkins' spire snail, grey squirrel, heath star moss, Wilson's honeysuckle, least duckweed, and garden yellow archangel. The nearest records of montbretia was 0.32km from the site, whereas rhododendron and Japanese knotweed were recorded 0.64km and 0.80km from the site respectively.

3.8 Statutory Designated Sites

The desk study returned 0 records of Statutory designated sites.

3.9 Non-Statutory Designated Sites

The desk study shows the site lies within a B-line.

3.10 NRW Priority Areas

The site lies within the Heathland & Grassland boundary.

3.11 Ancient Woodland Inventory

Records of 12 Ancient Semi-Natural Woodlands (ASNW) were returned during the desk study. The nearest woodland listed on the Ancient Woodland Inventory is an area of ASNW 750m to the south west.

3.12 Waterbodies

Refer to Table 2 for a list of waterbodies / watercourses within 0.25km of the site.

Table 2. Waterbodies within 0.25km of the site

Waterbody / Watercourse ID	OS Grid Reference	Description
Pond	SN 54610907	Within site
Un-named watercourse	SN 54410903	Un-named watercourse drains the western boundary of the site.
Un-named watercourse	SN 54770903	Un-named watercourse drains to the east of the site.
Headwaters of afon Marlais	SN 54700881	Confluence of above streams

4. SITE APPRAISAL

The site consists of semi-improved and marshy grassland bordered by a network of hedgerows and ditches. Refer to Appendix B for the completed Phase One Habitat Map and Appendix C for Photographs.

4.1 A2.2 Scrub

The ditches through the centre of the site are bounded by a band of bramble and grey willow scrub (Photo 1).

4.2 B2.2 Semi-improved Grassland

There are 3 parcels of semi-improved grassland within the site boundary (Photos 2-4). All 3 fields were wet at the time of the survey, but are grass dominated. They are mowed regularly, with a short sward.

Bent dominates the top field, with abundant rye-grass and Yorkshire fog. Patches of common sedge occur at spring lines on the lower slope. Cocksfoot is frequent and soft rush occasional. Herbs include abundant creeping buttercup, frequent dandelion and lanceolate plantain, and occasional cuckooflower, dock, daisy, meadow buttercup and sorrel.

The middle field is dominated by bents and abundant Yorkshire fog. Wetter patches support common sedge and soft rush. Dandelion, creeping buttercup and lanceolate plantain are frequent, with occasional cuckooflower, dock, sorrel and marsh ragwort.

The lower field is dominated by Yorkshire fog, with abundant creeping bent, frequent rye grass and occasional sweet vernal grass. Wetter patches support soft rush. Herbs are more diverse, with occasional lanceolate plantain, meadow buttercup, birds foot trefoil, angelica, marsh ragwort, whorled caraway, catsear and spearwort.

4.3 B5 Marshy Grassland

There is a small area of marshy grassland along the spring line. This is dominated by soft rush, with frequent Yorkshire fog, purple moor grass, sharp-flowered rush and occasional reedmace (Photo 5). Herbs include creeping and meadow buttercup, angelica, birds-foot trefoil, knapweed, willowherb and marsh ragwort. Bramble and grey willow are invading from the ditch line.

The main body of marshy grassland occupies the eastern field (Photo 6). This is dominated by purple moor grass, with soft rush and frequent sharp-flowered rush. Drier patches support red fescue and bents. Herbs include frequent creeping buttercup, birds-foot trefoil and willowherb. Devils-bit scabious, angelica, sneezewort, cuckooflower, tormentil, marsh thistle and nettle are occasional. Bramble and grey willow are invading from the hedge line, and downy birch is self-setting.

4.4 G1 Standing Water

A pond has been created at the bottom of slope of the marshy grassland. It is fed by a series of ditches (Photo 7). Small patches of Sphagnum occur along the edge with sharp flowered rush and reed-mace. The pond is dominated by broad-leaved potamogeton, and Parrot's feather occurs along the margins.

4.5 G2 Running Water

A series of ditches drain across the site. Those through the centre of the site are overgrown with bramble and willow (Photo 1).

4.6 J2.1.1 Intact hedge

The hedge bordering the lane is dominated by hazel, with abundant grey willow and bramble (Photo 8). Alder, hawthorn and gorse are frequent, with occasional sycamore and dog rose. Leylandii, cotoneaster and buddleja are present. Herbs include foxglove, imperforate St. John's wort, willowherb, knapweed, yarrow, creeping vetch and herb Robert.

The eastern and southern hedgerow is dominated by grey willow, with frequent oak and gorse and occasional downy birch (Photo 9). Bramble is abundant.

The western hedgerow is dominated by grey willow with frequent oak and hazel, occasional holly and abundant bramble (Photo 10). Open areas have bilberry, broad buckler & lady fern and polypody.

4.7 Protected Species Assessments

4.7.1 Incidental Records

None

4.7.2 Invasive Non-Native Species

The northern hedgerow contains significant quantities of leylandii and buddleja and occasional cotoneaster. Chilean rhubarb is present along the western ditch line. Parrot's feather is present in the pond.

Parrot's feather and cotoneaster are listed under Section 9 of the Wildlife and Countryside Act 1981.

5. ECOLOGICAL ASSESSMENTS

5.1 Designated Sites, Habitats, Flora and Fauna

Guidelines have been provided to assess the importance of an ecological feature value within a geographical context, as recommended within the CIEEM Guidelines for Ecological Impact Assessment (2016) and the CIEEM Guidelines for Ecological Report Writing (Dec. 2015). Please refer to Table 3 and 4 below. Refer to current proposed design.

Table 3. Ecological Value Assessments

Importance	Examples of features
International & European	European designated or proposed sites such as Ramsar Sites, Special Protection Areas, Special Areas of Conservation, World Heritage sites or Biosphere Reserves; or otherwise meeting criteria for European or International designation. Sites supporting populations of European important species. Species listed within the Annex's of The Conservation of Habitats & Species Regulations 2010
National	Nationally designated sites such as Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), areas of key habitats and species within the UK Biodiversity Action Plan. Sites supporting viable breeding populations of Red Data Book (RDB) species (excluding scarce species), or supplying critical elements of their habitat requirements. Species listed within the schedules of the Wildlife & Countryside Act 1981.
Regional	Sites containing viable areas of threatened habitats and species listed in a regional Biodiversity Action Plan, sites exceeding Site of Importance for Nature Conservation (SINC) criteria. Sites supporting viable populations of Nationally Scarce species or those included in the Regional Biodiversity Action Plan on account of their rarity, or supplying critical elements of their habitat requirements.
High Local	Sites meeting the criteria for a county, vice county or metropolitan area designation (such as SINC), which may include amenity and educational criteria in urban areas. Ancient semi-natural woodland. Designated Local Nature Reserves. Sites containing viable areas of any key habitat type or species identified in the Local Biodiversity Action Plan (LBAP). Sites supporting viable breeding populations of species known to be county/metropolitan rarities e.g., featuring in county 'red data book' or LBAP, or supplying critical elements of their habitat requirements.
Moderate Local	Undesignated sites or features considered appreciably to enrich the habitat resource within the context of the Borough or District, or included in the Borough or District LBAP. Amenity and educational functions will be recognised in urban areas. Sites with viable breeding populations of species listed as rare in the District or Borough LBAP or supplying critical elements of their habitat requirements.
Low Local	Undesignated sites or features considered appreciably enriching the habitat resource within the context of the Parish or neighbourhood.
Negligible	Low-grade and widespread habitats.

Table 4. Impact level Criteria

Severe	Permanent impacts
Major	Loss of feature and/or quality and integrity of feature; severe damage to key characteristics, features or elements.
Moderate	Loss of feature, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
Minor	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements
Neutral	No impacts

5.2 Designated Sites

5.2.1 Statutory Designated Sites

There are no statutory designated sites within the search buffer

5.2.2 Non-Statutory Designated Sites

The site lies within a Heathland and Grassland Priority Area and a B-line.

5.2.3 Ancient Woodland Inventory

The closest woodland listed on the Ancient Woodland Inventory is an area of ASNW, located 0.75km SW of the site and of **high local** value. The works required to fulfil the proposed design will be relatively localised, therefore the risk of adverse impacts to Ancient Woodland are considered **negligible**. As such, the ancient woodland inventory will not be considered further in this report.

5.3 Habitats

5.3.1 Semi-improved grassland

The fields are relatively species poor and structurally uniform, but will provide pollinator interest. The habitat value has been assessed as **low local**. Under the current proposed design, loss or damage to this habitat would be **minor** without mitigation. Further recommendations are provided in Section 6.

5.3.2 Marshy grassland

The marshy grassland is rank, with tussocky purple moor grass and soft rush dominating. Wetland plants are present in the sward including devil's bit scabious. It will provide habitat for invertebrates, amphibians and reptiles. The site has high potential under suitable management. The habitat value has been assessed as **moderate local**. Under the current proposed design, loss or damage to this habitat would be **moderate** without mitigation. Further recommendations are provided in Section 6.

5.3.3 Standing & Running Water

The stream and pond provide habitat and feeding opportunities for amphibians, reptiles, otter, birds and bats. The habitat value has been assessed as **moderate local**. Under the current proposed design, loss or damage to this habitat would be **moderate** without mitigation. Further recommendations are provided in Section 6.

5.3.4 Hedgerow

The hedgerows are relatively open and invasive species are present in the northern hedge, however they provide habitat, connectivity and landscape interest. They will provide nesting opportunities for birds or foraging and commuting habitat for bats. The habitat value has been assessed as ***moderate local***. Under the current proposed design, loss or damage to this habitat would be ***moderate*** without mitigation.

Further recommendations are provided in Section 6.

5.3.5 Scrub

Areas of scrub associated with the ditch lines and hedgerows provides habitat and foraging opportunities for birds, mammals and invertebrates, but also threatens the marshy grassland. The habitat value has been assessed as ***low local***. Under the current proposed design, loss or damage to this habitat would be ***minor*** without mitigation.

Further recommendations are provided in Section 6.

5.4 UK BAP Priority Habitats and Species

UK BAP priority habitats and species were those that were identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan (UK BAP). As a result of devolution, conservation action is now focused at a country-level rather than a UK-level, and the UK BAP was succeeded by the UK Post-2010 Biodiversity Framework in July 2012. The UK list of priority species, however, remains an important reference source and has been used to help draw up statutory lists of priority species and habitats in the four countries of the UK.

The field survey identified the on-site habitats as having the potential to support the following groups in varying capacities, which are also listed under UK BAP: birds, small mammals, otter, bats, amphibians, reptiles and invertebrates.

5.5 Ecosystem Resilience

Area loss can cause populations of organisms to decline due to a decrease in habitat size. The habitats present on site are declining in the wider area. Therefore, if the proposed development site is cleared without any mitigation for development, the impact on ecosystem resilience is expected to be ***moderate***.

6. CONCLUSIONS AND RECOMMENDATIONS

The combination of desk and field surveys undertaken at the proposed development site identified that the site has ***moderate local*** ecological value in relation to CIEEM guidelines. The dominant habitat is semi-improved grassland, with marshy grassland, hedgerow and watercourses. The diversity of habitats is likely to provide habitat and feeding opportunities for a number of protected species.

Recommendations necessary for informing the design process are provided below, as well as recommendations for biodiversity enhancement in order to fulfil the Biodiversity and Resilience of the Ecosystems Duty (Section 6 Duty). Where a species has been omitted, they are not considered a constraint to the proposed development.

6.1 Biodiversity and Resilience of Ecosystems Duty (Section 6 Duty)

- 6.1.1 The Environment (Wales) Act 2016 introduced an enhanced biodiversity and resilience of ecosystems duty (Section 6 Duty) applicable to Local Authorities. This duty filters through to all those participating in the Planning process.
- 6.1.2 Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity.
- 6.1.3 In order to provide a net benefit for biodiversity it is recommended that the proposed development should incorporate artificial habitats such as bat boxes, bird boxes and hibernacula, the details of which should be agreed with the LA ecologist.

6.2 Marshy Grassland

- 6.2.1 The marshy grassland is un-grazed and rank, plant diversity is suppressed and scrubby populations are low. The site is in sub-optimal condition, with bramble, willow and birch beginning to colonise. Without intervention the marshy grassland will be lost to scrub.
- 6.2.2 Discussions with the applicant after the survey addressed the potential value of the marshy grassland and advised that this area would not be ideal for solar panel placement. The applicant was agreeable to removing this area from the proposed array layout. Thus, direct negative impacts on the marshy grassland will be negligible. The applicant is amenable to managing the marshy grassland in a positive manner, ground conditions and livestock availability allowing.

6.3 Semi-improved grassland

- 6.3.1 The grassland is species poor and closely mown.
- 6.3.2 The installation of a solar array provides opportunities to manage the grassland to increase its biodiversity value. Recent research and guidance (BRE 2014) have demonstrated the potential biodiversity gains that can be realised at such sites if well planned and managed. Management of the grassland to increase floral diversity will entail an early spring cut followed by a cut and remove of grass in late July/early August to allow for flowering and seed set. Removal of arisings will lower nutrient levels, increase diversity and reduce the biomass of cut material over time.

6.4 Marsh Fritillary

- 6.4.1 The nearest record of marsh fritillary returned in the desk study is 1.07km from the site, with 15 counts within the search buffer and significant populations in the wider area. The marshy grassland is un-grazed and rank, scabious populations are low and the site is currently sub-optimal for marsh fritillary.
- 6.4.2 Discussions with the applicant after the survey addressed the potential value of the marshy grassland and advised that this area would not be ideal for solar panel placement. The applicant was agreeable to removing this area from the proposed array layout. Thus, direct negative impacts on marsh fritillary will be negligible. The applicant is amenable to managing the marshy grassland in a positive manner, ground conditions and livestock availability allowing.

6.5 Otter & Water Vole

- 6.5.1 The nearest record of otter returned in the desk study is 1.6km away from the site to the south, with an old record for water vole 1.8km to the south east. The stream within and adjacent to the site form the headwaters of the afon Morlais which drains to the Loughor estuary at Llangennech. There are 10 records for otter on the Morlais downstream just outside the search boundary. No signs of otter were observed during the course of the survey, but the pond will provide amphibian prey resource during the spring months, and patches of scrub suitable cover. The Molinia is generally too open. The habitat is sub-optimal for water vole, and given the sites isolation from any known colonies, their presence is considered to be highly unlikely.
- 6.5.2 The development of the solar array is unlikely to impact upon their habitat or directly upon the species if present.

6.6 Hazel dormouse

- 6.6.1 The nearest report for dormouse was in woodland 0.15km to the west of the site, with 74 reports overall within 2 km. The hedgerows provide sub-optimal habitat for dormouse, but are well linked within the landscape and their presence cannot be ruled out.
- 6.3.2 The installation of the solar array will not require any scrub or hedgerow removal and no direct impacts upon hazel dormouse are anticipated. Hedgerow management will be undertaken in a sympathetic manner.

6.7 Bats

- 6.7.1 The retention of hedgerows and trees on site should result in negligible impacts to bats. No site lighting will be required.

6.8 Birds

- 6.8.1 All nesting birds are protected under Section 1 of the Wildlife and Countryside Act of 1981. Therefore, all vegetation clearance should be planned outside the nesting bird season.

6.9 Reptiles & Amphibians

- 6.9.1 The habitat within the wider survey area presents common species of reptile (slow-worm, grass snake and common lizard) and amphibians (toad, frog & palmate newt) with foraging opportunities and suitable breeding habitat. It is possible that the site may offer suitable refugia and hibernacula opportunities for reptiles, but these will not be associated with the proposed panel locations which will be on closely mown grassland.
- 6.9.2 The provision of a timber and/or stone piles near the pond would provide hibernacula for overwintering species.

6.10 Invasive Non-Native Species

- 6.10.1 Cotoneaster, parrot's feather, leylandii, Chilean rhubarb and buddleja were identified on site, the former two listed under Schedule 9, Section 14 of the Wildlife and Countryside Act 1981. As such it is an offence to plant or otherwise cause the species to grow in the wild. Section 14(2) of the Wildlife and Countryside Act 1981 states that if any person plants or otherwise causes to grow in the wild any plant which is included in Part 2 of Schedule 9, they shall be guilty of an offence, therefore proactive management is required.

Removal of cotoneaster and leylandii from the hedgerow and replacement with native species of local provenance such as hawthorn, hazel and field maple will significantly enhance the value of the hedgerow.

Eradication of the parrot's feather will be challenging, but its spread off site should be prevented

Removal of the Chilean rhubarb adjacent to the western stream/ditch will help prevent its spread from the site.

7. LEGISLATION

7.1 Otters and the Law

7.1.1 The otter is a European Protected Species (EPS). It is against the law to damage or destroy an otter breeding site or resting place, or deliberately to capture, kill, injure or disturb an otter.

7.1.2 Otters are fully protected by the following pieces of legislation:

- The Conservation of Habitats and Species Regulations 2017 (regulation 42) fully protects otters, making it **an offence to:** -
 - *Intentionally or deliberately capture, injure or kill an Otter.*
 - *Damage or destroy a breeding or resting place of an Otter, or intentionally or recklessly damage or destroy any structure or place used for shelter or protection*
 - *Intentionally or recklessly disturb an Otter in a place used for shelter or protection, or deliberately disturb Otters in such a way as to be likely significantly to affect (i) the ability of any significant group of Otters to survive, breed, rear or nurture their young, or (ii) the local distribution or abundance.*
 - *Intentionally or recklessly obstruct access to a place used for shelter or protection.*
 - *Possess an Otter (alive or dead), or any part of an Otter*
- Schedule 5 of the Wildlife and Countryside Act 1981 (as amended by the CROW [Countryside Rights of Way] Act 2000) fully protects otters, making it **an offence to:** -
 - *Intentionally or recklessly disturb any otter while it is occupying a structure or place which it uses for shelter or protection*
 - *Intentionally or recklessly obstructs access to any structure or place used by an otter for shelter or protection*
 - *Sell, offer or expose for sale any otter*

7.1.3 For any disturbance to occur a derogation or **EPS licence** must be gained from Natural Resources Wales. To gain an EPS Licence from Natural Resources Wales (NRW), NRW must be satisfied that;



- i. granting the licence would not be detrimental to the Favourable Conservation Status (fcs) of the populations of species concerned within its natural range.
- ii. the derogation (licence) is in the public interest of Health and Safety or for other reasons of over-riding public interest, including those of a socio-economic nature or will have a benefit of primary importance to the environment.
- iii. there is no satisfactory alternative to the derogation which would allow the described development to proceed but which would avoid or reduce the need for any adverse impact to the species.

7.1.4 Otters are also protected by;

- Natural Environment and Rural Communities Act 2006 and now the Environment (Wales) Act 2016.
- Annex II Habitats Directive (protection through Special Areas of Conservation)
- UK Biodiversity Action Plan Priority Species and Species of Principal Importance in Wales

7.2 Bats and the Law

7.2.1 Bats are protected by the following pieces of legislation:

- Schedule 5 and 6 of the Wildlife and Countryside Act 1981 (as amended by the CROW [Countrywide Rights of Way] Act 2000)
- The Environmental Damage (Prevention & Remediation) Regulations 2009 – A protected species and its habitat is protected under this legislation as well as others.
- The Conservation of Habitats and Species Regulations 2017 (regulation 42) fully protects all bats and their roosts, making it **an offence to deliberately kill, injure or capture** (take) bats; *to deliberately disturb bats; damage or destroy bat roosts* or resting places (this is considered an “Absolute Offence” as damage and destruction may detrimentally effect the Continuous Ecological Functionality of that roost / resting place); possess or transport a bat or any part of a bat; sell (or offer for sale) or exchange bats or parts of bats.
- For any disturbance to occur a derogation or **EPS licence** must be gained from Natural Resources Wales. To gain an EPS Licence from Natural Resources Wales (NRW), NRW must be satisfied that;
 - i. the licence would not be detrimental to the Favourable Conservation Status (fcs) of the populations of species concerned within its natural range.
 - ii. the derogation (licence) is in the public interest of Health and Safety or for other reasons of over-riding public interest, including those of a socio-economic nature or will have a benefit of primary importance to the environment.
 - iii. there is no satisfactory alternative to the derogation which would allow the described development to proceed but which would avoid or reduce the need for any adverse impact to the species.

7.2.2 Bats are also protected by;

- Appendix III of the Bern Convention
- Appendix II of the Bonn Convention (including the Convention's Agreement on the conservation of Bats in Europe)
- Natural Environment and Rural Communities Act 2006 and now the Environment (Wales) Act 2016.
- All bats are listed in Annex IV of the EC Habitats Directive and the British species listed in Schedule 2 of the Habitats Regulations 1994 (as amended) and are therefore designated as *European Protected Species*. These *protected* species are afforded enhanced protection and more stringent licensing provisions than those protected by the Wildlife and Countryside Act (WACA) alone.

7.3 The Hazel Dormouse and the Law

7.3.1 The hazel dormouse is a European Protected Species (EPS). It is against the law to damage or destroy a dormouse breeding site or resting place (summer or hibernation nest), or deliberately to capture, kill, injure or disturb a dormouse.

7.3.2 Dormice are fully protected by the following pieces of legislation:

- The Conservation of Habitats and Species Regulations 2017 (regulation 42) fully protects dormice, making it **an offence to** : -
 - *Intentionally or deliberately capture, injure or kill a dormouse.*
 - *Damage or destroy a breeding or resting place of a dormouse, or intentionally or recklessly damage or destroy any structure or place used for shelter or protection*
 - *Intentionally or recklessly disturb a dormouse in a place used for shelter or protection, or deliberately disturb dormouse in such a way as to be likely significantly to affect (i) the ability to survive, breed, rear or nurture their young, and includes in the case of animals of a hibernating or migratory species, to hibernate or migrate or (ii) the local distribution or abundance.*
 - *Intentionally or recklessly obstruct access to a place used for shelter or protection.*
 - *Possess a dormouse (alive or dead), or any part of a dormouse*
- Schedule 5 of the Wildlife and Countryside Act 1981 (as amended by the CROW [Countryside Rights of Way] Act 2000) fully protects dormice, making it **an offence to** : -
 - *Intentionally or recklessly disturb any dormouse while it is occupying a structure or place which it uses for shelter or protection*
 - *Intentionally or recklessly obstructs access to any structure or place used by a dormouse for shelter or protection*
 - *Sell, offer or expose for sale any dormouse*

7.3.3 For any disturbance to occur a derogation or **EPS licence** must be gained from Natural Resources Wales. To gain an EPS Licence from Natural Resources Wales (NRW), NRW must be satisfied that;

- i. granting the licence would not be detrimental to the Favourable Conservation Status (fcs) of the populations of species concerned within its natural range.
- ii. the derogation (licence) is in the public interest of Health and Safety or for other reasons of over-riding public interest, including those of a socio-economic nature or will have a benefit of primary importance to the environment.
- iii. there is no satisfactory alternative to the derogation which would allow the described development to proceed but which would avoid or reduce the need for any adverse impact to the species.

7.3.4 Dormice are also protected by;

- Natural Environment and Rural Communities Act 2006 (England) and the Environment (Wales) Act 2016.
- Annex II Habitats Directive (protection through Special Areas of Conservation)
- UK Biodiversity Action Plan Priority Species and Species of Principal Importance in Wales

7.4 Reptiles and the Law

7.4.1 All of the UK native reptiles are protected by law. The common species of reptiles found in this locality are common lizard, slow-worm, adder and grass snake. It is illegal to intentionally kill or injure these species under Section 9 (1) of the Wildlife and Countryside Act 1981 (as amended).

7.4.2 All native UK reptiles are considered of 'principle importance' under Section 7 of the Environment (Wales) Act 2016. This places a duty on every public authority, in exercising its functions, to have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.

7.4.3 Under the National Planning Policy Framework (NPPF April 2012), the presence of any Protected Species (which includes all reptiles species) are a material planning consideration. The ODPM 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System, provide additional advice and support the NPPF.

7.5 Amphibians and the Law

7.5.1 All of the UK native amphibians are protected by law. The common species of amphibians in this locality are common frog, common toad, smooth newt and palmate newt. It is illegal

to intentionally kill or injure these species under Section 9 (1) of the Wildlife and Countryside Act 1981 (as amended).

7.5.2 The common toad is considered of 'principle importance' under Section 7 of the Environment (Wales) Act 2016. This places a duty on every public authority, in exercising its functions, to have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.

7.5.3 Under the National Planning Policy Framework (NPPF April 2012), the presence of any Protected Species) which includes the Common Toad) are a material planning consideration. The ODPM 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System, provide additional advice and support the NPPF.

7.6 Birds and the Law

7.6.1 All species of bird are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). Protection was extended by the Countryside and Rights of Way (CROW) Act 2000. Under the above legislation it is an offence to intentionally:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

7.6.2 Certain species are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and receive protection under Sections 1(4) and 1(5). The protection was extended by the Countryside and Rights of Way (CROW) Act 2000. There are special penalties where the offences listed above are committed for any Schedule 1 species and it is also an offence to intentionally or recklessly:

- disturb any such bird when it is building its nest or while it is in or near a nest containing dependant young; or
- disturb the dependant young of any such bird.

7.7 Badgers and the Law

7.7.1 The protection of Badgers Act 1992 makes it illegal to kill, injure or take a badger, or interfere with a sett. In addition, they are listed on Schedule 6 of the Wildlife & Countryside Act 1981, which prohibits certain methods of killing and capture.

7.8 Water Voles and the Law

7.8.1 Water voles are listed under Schedule 5 of the Wildlife & Countryside Act 1981, receiving full protection since 2008. The Wildlife & Countryside Act 1981 (as amended), lists the following offences: -

- Intentionally kill, injure or take water voles (Section 9 (1)).
- Possess or control live or dead water voles or derivatives (Section 9 (2)).
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection (Section 9 (4) (a & c)).
- Intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose (Section 9 (4) (b)).
- Sell water voles or offer or expose for sale or transport for sale (Section 9 (5)).
- Publish or cause to be published any advertisement which conveys the buying or selling of water voles (Section 9 (5)).

7.9 Environment Act (Wales) 2016

7.9.1 This act has replaced the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty. It came into force in May 2016.

7.9.2 Section 6 of the Act places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In doing so, public authorities must also seek to 'promote the resilience of ecosystems'. Under Section 6, public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience.

7.9.3 Section 7 of the Act places a duty on public authorities to take steps to maintain and enhance biodiversity. This section replaces the duty in section 42 of the NERC Act 2006. The Section 7 Priority Species under this act is a list of the living organisms of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. The Section 7 Priority Habitats is a list of the habitats of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales.

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We confirm that in preparing this Report we have exercised reasonable skill and care, taking into account the project objectives, the agreed scope of the work and prevailing site conditions.

Advice in this report is based on the judgement of I&G Ecological Consulting and the interpretation of data gathered during the course of their survey on the property named in this document.

The findings and advice given during the course of this survey is provided by employees of I&G Ecological Consulting acting only on behalf of I&G Ecological Consulting.

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Appendix A. LERC Data Search

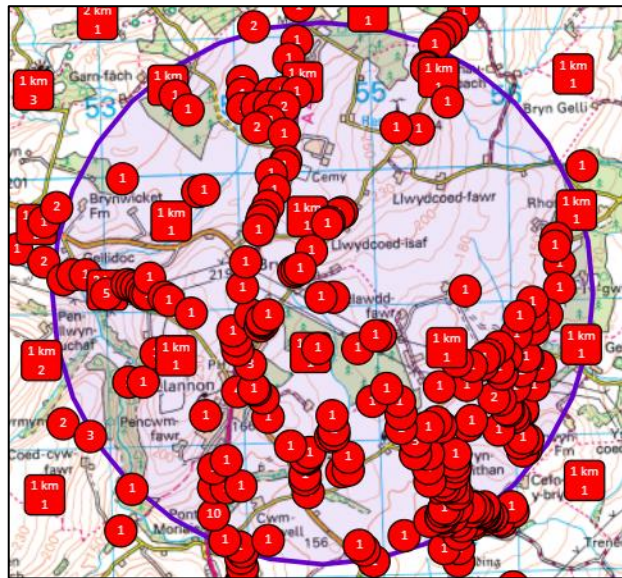


Figure 3. LERC Protected Species Data Search Records

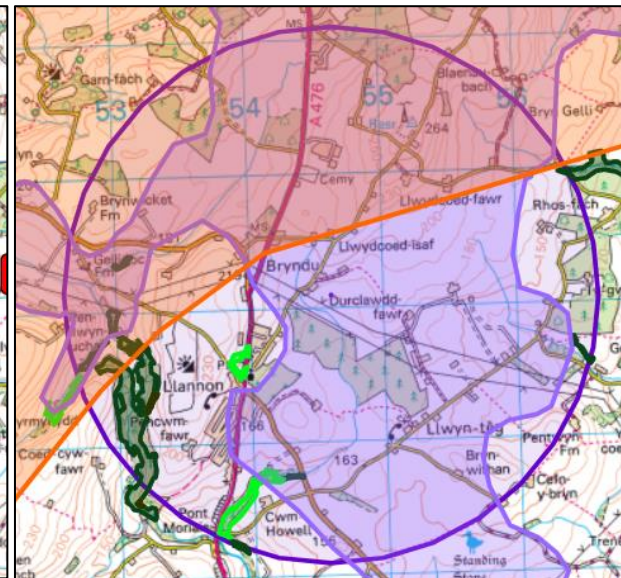
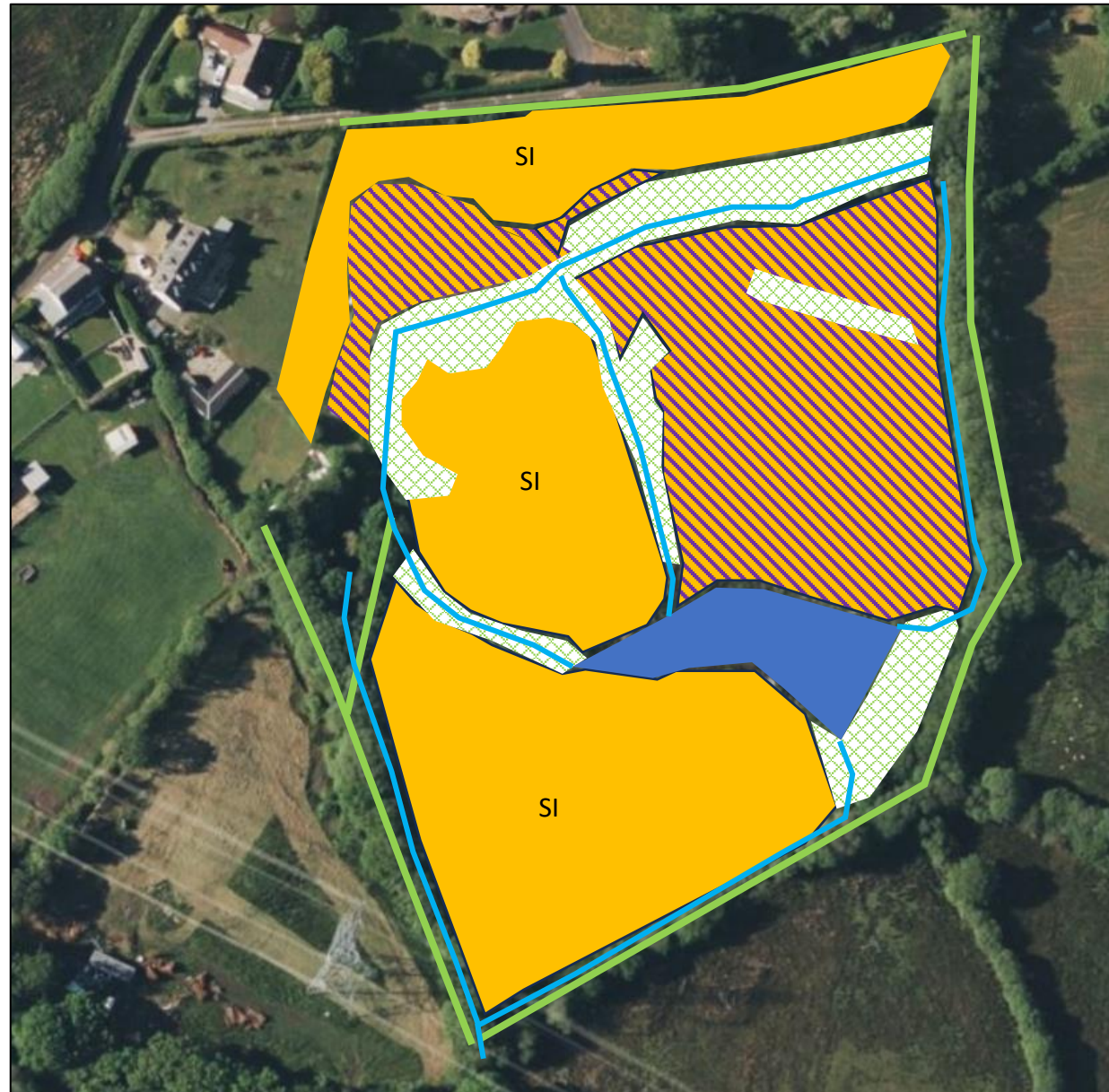


Figure 4. LERC Protected Sites Data Search

Site Type	Key	Number of sites	Category	Intersection Area	Percentage of search area	Display clipped	Display full
Ancient Semi Natural Woodland		12	Priority Area	206,625 m ²	1.65%		
Restored Ancient Woodland Site		5	Priority Area	54,248 m ²	0.43%		
Plantation on Ancient Woodland Site		2	Priority Area	3,826 m ²	< 0.01%		
NRW Priority Area (Heathland and Grassland)		1	Priority Area	8,620,689 m ²	69.00%		
NRW Priority Area (Woodland - PAWS)		2	Priority Area	3,825 m ²	< 0.01%		
B-Lines		1	Local - Non-statutory	5,002,600 m ²	40.04%		

Appendix B. Phase One Habitat Plan



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Legend

	A2.2	Scrub
	B2.2	Semi-improved grassland
	B5	Marshy grassland
	G1	Standing water
	G2	Running water
	J2.1.1	Hedge

Appendix C. Photographs



Photograph 1. Willow & bramble scrub along ditch lines



Photograph 2. Upper semi-improved field



Photograph 3. Middle semi-improved field



Photograph 4. Lower semi-improved field



Photograph 5. Marshy grassland and spring line



Photograph 6. Main block of marshy grassland



Photograph 7. Pond



Photograph 8. Northern hedgerow bordering top meadow



Photograph 9. Eastern hedgerow bordering marshy grassland



Photograph 10. Western hedgerow with bilberry