Environmental Statement: Chapter 8 – Biodiversity

Development of National Significance Pre-Application Consultation

Alaw Môn Solar Farm

Land west of the B5112, 415m south of Llyn Alaw, 500m east of Llantrisant and 1.5km west of Llannerch-y-Medd, Anglesey

October 2023

8.0 Biodiversity

Introduction

8.1 This chapter of the ES assesses the likely significant effects of the Development on the environment in respect of Biodiversity.

8.2 The chapter has been prepared by BSG Ecology. It has been written by Senior Ecologist Emily McVean ACIEEM and Principal Ecologist Guy Miller CEcol MCIEEM. Emily has 11 years' professional experience of ecological and environmental consultancy; Guy has over 23 years' experience as a professional ecologist. Both have experience of a range of EIA projects in the renewable sector. The chapter has been technically reviewed by Director Owain Gabb MCIEEM who has 23 years' applied post graduate ecological experience, and a background and technical expertise in ornithology and EIA for renewable energy projects.

Planning Policy Context

National Planning Policy

8.3 Planning Policy Wales (Edition 11, 2021)[i] ('PPW') provides the framework for sustainable development in Wales. The Section 6 Duty in the document sets out the objective for 'Distinctive and Natural Places' including policies to protect designated sites, habitats and species. It specifies that development proposals must: *'secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks'.*

8.4 Technical Advice Note ('TAN') 5[ii] supplements Planning Policy Wales and provides advice about how the land use planning system in Wales 'should contribute to protecting and enhancing biodiversity and geological conservation.'

8.5 Future Wales – The National Plan 2040 (2021)[iii] is a national development framework, setting the direction for development in Wales to 2040. It is a development plan with a strategy for addressing key national priorities. Policy 9 – Resilient Ecological Networks and Green Infrastructure states that: '*To ensure the enhancement of biodiversity, the resilience of ecosystems and the provision of green infrastructure, the Welsh Government will work with key partners to:*

- *identify areas which should be safeguarded and created as ecological networks for their importance for adaptation to climate change, for habitat protection, restoration or creation, to protect species, or which provide key ecosystems services, to ensure they are not unduly compromised by future development; and*
- *identify opportunities where existing and potential green infrastructure could be maximised as part of placemaking, requiring the use of nature-based solutions as a key mechanism for securing sustainable growth, ecological connectivity, social equality and well-being.*
- *... In all cases, action towards securing the maintenance and enhancement of biodiversity (to provide a net benefit), the resilience of ecosystems and green infrastructure assets must be demonstrated as part of development proposals through innovative, nature-based approaches to site planning and the design of the built environment.'*

Local Planning Policy

8.6 The Anglesey and Gwynedd Joint Local Development Plan[iv] was adopted on 31st July 2017. It specifies that solar schemes must ensure that: *'All impacts on … natural resources have been adequately mitigated, ensuring that the special qualities of all locally, nationally and internationally important landscape, biodiversity and heritage designations, including, where appropriate, their settings are conserved or enhanced'* and, *'That a Construction Environmental Management Plan (CEMP) is provided to demonstrate that any potential negative effects arising during construction and decommissioning phases are avoided.'*

8.7 Strategic policy PS 19 also outlines the considerations to be made when determining a planning application, including the need to *'Protect, retain or enhance trees, hedgerows or* woodland *of visual, ecological, historic cultural or amenity value'.*

8.8 Policy AMG 5 states: *'Proposals must protect and, where appropriate, enhance biodiversity that has been identified as being important to the local area'*.

Legislative Context

8.9 The key legislation relating to nature conservation and biodiversity that is relevant to this assessment is:

- The Environment (Wales) Act 2016[v];
- The Conservation of Habitats and Species Regulations 2017 (as amended)[vi]; and
- The Wildlife and Countryside Act 1981 (as amended)[vii].

8.10 Further details of these are provided in Appendix 8.1: Ecological Appraisal.

Assessment Methodology

Baseline Characterisation

8.11 Baseline data collection was coordinated by BSG Ecology between April 2020 and July 2021; with updates in 2023. The methods and results of the baseline data collection are presented in Appendices 8.1 to 8.3, which are survey reports (Ecological Appraisal, Bird Survey Report, Great Crested Newt Survey Report). A concise summary of the methods is provided below.

Desk Study

8.12 Data on locally designated sites (Local Wildlife Sites) and species records were obtained from Cofnod, the North Wales Environmental Information Service; these were requested for a search area up to 2km from the Site boundary (see Table 8.1, below). The MAGIC.gov website[viii] was accessed to identify any internationally statutory designated sites, such as Special Protected Areas ('SPAs'), within 5km of the Site[1].

8.13 On-line aerial photographs and maps were reviewed to identify any ponds within 250m of the Site, and to provide further contextual information on habitats and habitat connectivity within the surrounding local landscape.

8.14 The Welsh Chough Project, was contacted on 6th July 2021 with respect to chough *Pyrrhcorax pyrrhocorax,* a bird which nests on sea cliffs on Anglesey but ranges more widely in winter. The project officer searched for records of chough on a database: all 1km grid squares which are intersected by the Site boundary were checked for records.

8.15 Table 8.1 below summarises data sources for the desk study.

Table 8.1: Desk Study Data Sources

Data source	Date accessed / received	Notes
MAGIC (www.magic.defra.gov.uk)	Accessed in March 2020; updated June 2021 and again in July 2023.	Internationally designated sites within 5km of the Site; nationally designated sites within 2km of the Site. Ponds within 250m of the Site. Priority habitats within the Site.
Google maps (www. Google.co.uk/maps)	Accessed in March 2020; updated June 2021 and July 2023	A search was made for ponds within 250m of the Site and for other

[1] NB Distances referred to throughout this chapter refer to the Site, but for simplicity do not include the land for the underground cabling for the Development's connection to the National Grid Substation at Wylfa. This underground cabling route is considered separately (refer to paragraph 8.113 and Table 8.9).

Data source	Date accessed / received	Notes
		habitats/ features within the surrounding landscape.
Cofnod, the North Wales Environmental Information Service	Received March 2020; updated in November 2020, July 2021 and July 2023.	Records of locally designated sites (Local Wildlife Sites) and existing species records; 2km search area.
Welsh Chough Project	Received in July 2021.	All 1km grid squares which are intersected by the Site boundary were checked for records of chough. Given the review of the data and survey results, impacts on this species are considered unlikely; updated consultation was not carried out in 2023.

Survey Areas

8.16 The extent of the survey area varied depending on the survey type; the approach for field survey was devised with reference to relevant industry standard guidance; the survey areas and relevant guidance is shown in Table 8.2, below.

Table 8.2: Study Area for Each Survey Completed to Inform this Assessment

Survey Type	Study Area
Phase 1 habitat survey	Within the Site boundary.
Breeding bird characterisation survey	The Site, and habitat immediately adjacent to the Site boundary.
Wintering bird survey	The Site, adjacent fields up to 500m from the Site boundary, and the southern part of Llyn Alaw.
Great crested newt *Triturus cristatus* survey	Ponds within 250m of the Site.

Extended Phase 1 Habitat Survey

8.17 The results of the Extended Phase 1 Habitat Survey are presented in Appendix 8.1: Ecological Appraisal. Habitat Surveys were undertaken with reference to Phase 1 habitat survey methodology (JNCC, 2010)[ix] and the survey was 'extended' to include searches for invasive non-native plants and assess habitat suitability for, and evidence of use by, protected species such as reptiles, badger *Meles meles*, otter *Lutra lutra,* and water vole *Arvicola amphibius*.

8.18 The majority of the extended Phase 1 habitat survey work was carried out by consultant ecologist Richard Birch CEcol MCIEEM, who undertook the extended Phase 1 habitat survey on 6th and 7th May 2020. The Site was revisited on 4th May 2021 by Principal Ecologist Guy Miller CEcol MCIEEM and Senior Ecologist Emily McVean ACIEEM to review and update the previous survey results following minor changes to the proposed site boundary and development layout. A further visit was carried out on 17th and 18th July 2023 to review and update the previous survey data, where necessary.

Bird Surveys

8.19 The methods and results of the breeding and wintering bird surveys are presented in Appendix 8.2 Bird Survey Report. The survey work in 2020 was carried out by Consultant Ornithologist Stuart Thomas MCIEEM (except where mentioned. A summary of the methods that were employed is provided below:

- Breeding bird surveys were carried out within the Site on a monthly basis in April, May and June 2020; and each visit was spread over two days; this work was updated in April, May and June 2023, by BSG Ecology (consultant ornithologist Mike Read).

- Wintering bird surveys were carried out between October 2020 and March 2021; nine visits in total. Each visit involved scanning and recording birds in fields and on waterbodies within the Site and within a 500m radius from the Site boundary. The survey work also involved a count of waterfowl on the southern part of Llyn Alaw SSSI.

- A barn owl survey was carried out in December 2021. Buildings within 100m of the Site, which were considered to have potential to support nesting barn owl were visited and assessed (the work focussed on farm buildings around Nantanog). This survey was updated on 2nd August 2023.

- A visit to the north Side of Llyn Alaw was made on 17th July 2023 to determine whether it was possible to view the Site from areas used by Greenland white-fronted geese *Anser albifrons flavirostris* in winter months.

Great Crested Newt Surveys

8.20 The details of the survey methods and results are presented in the Great Crested Newt Report (Appendix 8.3). A summary is provided below.

8.21 A review of aerial photographs (Google Earth), online maps (OS 1:25,000 maps) and the extended Phase 1 habitat survey was undertaken to identify pond locations. From the initial review, 33 ponds were identified within the study area, which included the Site and a 250m perimeter around its boundary. Ponds beyond this distance were scoped out of the assessment.

8.22 Wherever access was possible these were subject to a Habitat Suitability Index ('HIS') assessment for great crested newt, taking into account industry standard guidance set out in ARG UK (2010)[x].

8.23 Following the HSI assessment, all accessible ponds within 250m of the Site that could be sampled (i.e. those not dry) were subject to eDNA survey for great crested newt in 2020. One pond (Pond 7) returned a positive eDNA survey result.

8.24 Pond 7 was subject to a population class assessment survey in spring 2021; six visits were undertaken between April and June, using bottle-trapping, torch light surveying, and egg searching.

8.25 Pond 7 was subject to a further population class assessment in spring 2023 to update the previous survey results. The eDNA survey was updated in 2023; three ponds (Pond 3, 7 and 8) returned a positive result for eDNA. After the positive eDNA results were obtained, Ponds 3 and 8 were also subject to further some survey work (once the eDNA results) to inform the assessment.

Consultation

8.26 Natural Resources Wales ('NRW') was contacted by letter on 7th May 2021 (Appendix 8.4). The purpose of this correspondence was to set out the development and associated scope of ecological surveys and assessment. A formal EIA Scoping response from NRW was also submitted to the Planning Inspectorate. This response from NRW was received on 14th June 2021.

8.27 NRW was subsequently consulted via the Discretionary Planning Advice Service ('DPAS') on 23rd June 2021 to discuss their response. A virtual meeting was held with various NRW specialists (including Planning Case Officer, Species Officer, Ornithologist, and Geodiversity Advisor), the Applicant, Barton Willmore (project planning specialist and Landscape Architect) and BSG Ecology (the project ecology specialist). The meeting focussed on the scope of the survey work and assessment, mitigation requirements in relation to impacts on great crested newt, and in relation to Nantanog SSSI (a geological SSSI). The agreed meeting notes are provided in Appendix 8.5.

8.28 Isle of Anglesey County Council ('IACC') was contacted by letter on 7th May 2021. The purpose of this correspondence was to set out the development and associated scope of ecological work and assessment. The letter was sent to IACC's Major Projects Planning Officer and was reviewed by IACC's Ecological and Environmental Adviser. The response from IACC confirmed that the Council was satisfied with the proposed approach for assessing the potential impacts of the Development on the identified ecological receptors. The letter and response are provided in Appendix 8.6.

8.29 British Trust for Ornithology ('BTO')/Echoes Project was consulted in relation to Greenland white-fronted goose *Anser albifrons flavirostris.* A local wintering population has recently been identified and this is subject to research through the Echoes Project. The initial consultation was undertaken through a virtual meeting on 6th July 2021 between the Echoes Project, BSG Ecology and the Applicant. At the meeting, the results of recent GPS monitoring of the Greenland white-fronted goose flock (which was completed between January-March 2021) were reviewed in relation to the Site. The agreed meeting record is

provided in Appendix 8.7. There was a follow up meeting on 8th March 2022 between BSG Ecology and the Echoes Project, to obtain an update from winter 2021/22; the data obtained from this survey period was limited, and therefore does not add significantly to the results from the previous year[2]. A further consultation was carried out on 19th June 2023 between BSG Ecology, the Echoes Project, and the Applicant; at this meeting, it was confirmed that is no new data since the previous consultation (the meeting record is present in Appendix 8.8); the project is currently involved in analysing existing data.

Ecological Impact Assessment Process

8.30 The evaluation and assessment within this chapter has been undertaken with reference to the Guidelines for Ecological Impact Assessment in the United Kingdom developed by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018)[xi] (referred to hereafter as the 'CIEEM Guidelines'). Although this is recognised as the industry standard for ecological assessment, the guidance is not prescriptive; rather, it aims to *'provide guidance to practitioners for refining their own methodologies'*.

Important Ecological Features

8.31 A first step in Ecological Impact Assessment ('EcIA') is the determination of which ecological features (habitats, species, ecosystems and their functions/processes) are important. Important features should then be subject to detailed assessment if they are likely to be affected by the proposed development. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project effects, such that there is no risk to their viability.

8.32 Ecological features can be important for a variety of reasons, and the rationale used to identify these is explained below. Importance may relate, for example, to the quality or extent of designated sites or habitats, to habitat/species rarity, to the extent to which they are threatened throughout their range, or to their rate of decline.

Evaluation: Determining Importance

8.33 The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case:

- International (European)
- United Kingdom
- Wales
- Regional (Anglesey and neighbouring authorities, Gwynedd and Conwy)
- County (Anglesey)
- Local
- Site (the Site boundary)

8.34 Taking into account the CIEEM Guidelines, it is considered that the effects on features of less than County importance are generally considered unlikely to trigger a mitigation or policy response in EcIA terms. However, where it is helpful to characterise and evaluate features within the Site, this assessment also uses the term "Site importance". This includes features which are assessed to be of value only in the context of the Site (and its immediate zone of influence). Features of Site importance are typically unlikely to require further assessment for the reasons set out above.

[2] In 2021/2022, of the three birds that were radio-tagged, one bird remained in Scotland; one arrived in Wales briefly at the beginning of the winter, but no further data were obtained; no data were obtained for the third bird. The 2021 data therefore provides the most useful baseline data (Dr Rachel Taylor, BTO/Echoes Project, pers. comm.; refer to Appendices 8.7 and 8.8 for further information).

Characterising and Quantifying Effects and Assessing their Significance

8.35 The CIEEM Guidelines state that ecological effects or impacts should be characterised in terms of ecosystem structure and function and reference should be made to: beneficial, adverse or neutral effects; extent; magnitude; duration; reversibility; timing and frequency; and cumulative effects. The guidelines provide a list of *'aspects of ecological structure and function to consider when predicting impacts and effects'* (Box 16).

8.36 The terms impact and effect are used within this chapter in accordance with the following definitions (as provided by the CIEEM Guidelines):

- Impact: Actions resulting in changes to an ecological feature. For example, the construction activities of a development require removal of a hedgerow.
- Effect: Outcome to an ecological feature from an impact. For example, the effects on a dormouse population from loss of a hedgerow.

8.37 Following the characterisation of effects, an assessment of their ecological significance is made. The CIEEM Guidelines promote a transparent approach in which a beneficial or adverse effect is determined to be significant or not, in ecological terms, in relation to the integrity of the defined site or ecosystem(s) and/or the conservation status of habitats or species within a given geographical area, which relates to the level at which it has been valued.

8.38 The judgement about whether an effect is significant or not, is independent of the value of the ecological feature; the value of any feature that will be significantly affected is then used to determine the implications, in terms of legislation and / or policy (CIEEM, 2018). Significance is a concept related to the weight that should be attached to effects when decisions are made.

Significant Effects

8.39 For the purposes of this assessment, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features'. A significant effect is simply an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. The CIEEM Guidelines state that *'A significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant adverse ecological effects can be lawfully permitted following EIA procedures*'. The assessment of significance is based on professional judgement. Effects can be beneficial or adverse.

8.40 The CIEEM Guidelines encourage the expression of significance of ecological effects with reference to a geographic frame of reference, as described above. Since other disciplines within the Environmental Statement ('ES') use criteria based on an expression of severity of significance to describe the significance of environmental effects. Table 8.3 provides a means of relating the two approaches and is provided to allow the ecological impact assessment to be integrated into the wider EIA without compromising the CIEEM approach.

Table 8.3: Relationship between Ecological Impact Assessment (EcIA) and wider EIA Assessment of Significance

Significance of Effect	EEM EcIA Significance Criteria
Major	Ecological effects assessed as being significant at the Regional scale or above, and that have triggered a response in development control terms. Within the ES these are considered to represent effects that are of major significance.
Moderate	Residual ecological effects assessed as being significant at the County scale and that have triggered a response in development control terms. These are considered to represent effects that are of moderate significance.
Minor	Residual ecological effects that have been assessed as being significant at the Site to Local scale and are unlikely to trigger a response in development control terms. These are considered to represent effects that are of minor significance.

Negligible	Residual ecological effects that are considered to be not significant at any geographical level and are unlikely to trigger a response in development control terms. These are considered to represent effects that are of no / negligible significance.
Neutral	No appreciable effect

NB In the final table in the chapter (Table 8.12, Table of Significance) the CIEEM and EIA equivalent terminology are both provided.

Mitigation

8.41 Where significant effects have been identified, the mitigation hierarchy has been taken into account, as suggested in the CIEEM Guidelines. Once avoidance and mitigation measures, and any necessary compensation measures, have been applied, and opportunities for enhancement incorporated, residual effects have then been identified.

8.42 Where mitigation and compensation has been proposed, this is proportionate with the geographical scale at which an effect is significant, as set out in the CIEEM Guidelines, which states: *'For example, mitigation and compensation for effects on a species population significant at a county scale should ensure no net loss of the population at a county scale. The relative geographical scale at which the effect is significant will have a bearing on the required outcome which must be achieved*…'.

Limitations and Assumptions

8.43 Access permission was not granted for all ponds; eight could not be accessed and these were assessed from aerial photos only. However, the survey and assessment approach used is considered to be sufficient to allow impacts on great crested newt to be assessed. This limitation is discussed in more detail in Appendix 8.3.

Baseline Conditions

8.44 This section sets out the findings of consultation, baseline ecological survey work and desk study. It then goes on to assess the importance of the identified ecological resources.

8.45 Ecological receptors are considered in the following order:

a. *Protected sites;*

b. *Habitats; and*

c. *Protected or priority species.*

8.46 It has been possible to "scope out" of the assessment, at the baseline stage, some species and habitats that are not likely to be significantly affected (for example, due to the design or operation of the Development, or because they are very commonplace and / or of very low conservation value) unless there are other reasons to consider them further (for example, they may be legally protected or require special care and therefore require particular mitigation measures to be adopted during the construction and operational phases of the Development).

8.47 Where it has been possible to scope out a particular ecological feature, the rationale for doing so is outlined (in the text below, and in Table 8.12).

Designated Sites

8.48 Details of designated sites are provided in Table 8.4 and Table 8.5 below. In summary:

- There are no internationally designated sites (Special Protection Areas ('SPAs')/Special Areas of Conservation ('SACs')/Ramsar Sites) within 5km of the Site;
- There are three nationally designated SSSIs within 2km of the Site: Nantanog SSSI (designated for its geological interest only) is within the Site boundary; Llyn Alaw SSSI is approximately 400m to the north of the Site. Tyddyn Gyrfer SSSI, another geological SSSI, is approximately 1.7km to the south. Llyn Llywenan SSSI, is approximately 2km to the south-west from the Site (and 1.6km from the land

for the underground cabling for the Development's connection to the National Grid Substation at Wylfa);

- In addition, Y Werthyr SSSI, which is approximately 4.5km to the south of the Site, is the only designated site within 200m of any roads which have been identified to be used by the Development's construction vehicles (as detailed in Chapter 11 Air Quality of the ES);

- There are three non-statutory designated Local Wildlife Sites ('LWS') within 2km of the Site: Cors-y-Bol LWS is adjacent to the west boundary of the Site; Tir Pori Traian LWS is located adjacent to the Site's north-east boundary.

Table 8.4: Statutory Designated Nature Conservation Sites

Site Name	Habitats/Interest[3]	Distance from the Site
Nantanog SSSI (geological)	*'Nantannog ravine is of special interest for its geology. The exposure features a bedded sequence of shales and sandstones of the Nantannog Formation, with shelly and graptolitic faunas. The Site contains excellent exposures, illustrative of the sedimentation and stratigraphy of Anglesey in the Lower Ordovician.'* NB This is not an ecological receptor but included here for completeness/reference.	Within the Site (although the developable area is on either side of the SSSI, outside of the SSSI boundary).
Llyn Alaw SSSI	A large area of mesotrophic open water. '*It has considerable ornithological interest especially for overwintering wildfowl; numbers of teal Anas crecca, shoveler Anas clypeata and whooper swans Cygnus cygnus can be around 1% of the British population.'* A range of other wildfowl and waders occur seasonally, and the uncommon slender spike rush Eleocharis acicularis occurs in the reservoir margins.	400m to the north of the Site
Tyddyn Gyrfer SSSI (geological)	*'This Site is of special interest for its Precambrian geology and lies within the largest outcrop of gneisses in southern Britain. The Site provides a small but informative exposure of interleaved paragneisses and amphibolites that are representative of the upper amphibolite facies Central Anglesey Gneisses in the late Neoproterozoic Coedana Complex.'* NB This is not an ecological receptor but included here for completeness/reference.	1.7km to the south of the Site
Llyn Llywenan SSSI	*'Llyn Llywenan is selected as an example of a moderately base-rich lowland lake in West Gwynedd; it is primarily of biological interest. The flora of the lake includes a range of submerged, floating and emergent macrophyte species.* *A variety of overwintering wildfowl species frequent Llyn Llywenan, including mallard, teal, wigeon, shoveler, tufted duck and pochard; it also supports an interesting breeding bird community.'*	2.1km to the south-west
Y Werthyr SSSI	A relatively intact example of a mesotrophic valley mire or 'poor fen' and has a high water-table. Vegetation includes: large stands of rushes, a variety of sedges as well as a range of wetland herbs.	c. 4.5km to the south-west, but within 200m of construction vehicle transport route.

8.49 Evaluation: Llyn Alaw SSSI (and other SSSIs) are assessed to be of national importance.

[3] Source: Countryside Council for Wales Site of Special Scientific Interest Citations.

Table 8.5: Non-Statutory Designated Nature Conservation Sites

Site Name	Habitats/Interest (source: data provided by Cofnod)	Distance from the Site
Cors-y-Bol LWS	A large area of valley mire on deep peat with associated areas of marshy grassland, mixed swamp, scattered and dense willow scrub and some semi-improved acid grassland. The whole area has considerable ornithological interest. It has [at the time of designation] populations of breeding snipe *Gallinago gallinago*, curlew *Numenius arquata*, lapwing *Vanellus vanellus*, grasshopper warbler *Locustella naevia*, sedge warbler *Acrocephalus schoenobaenus*, reed bunting *Emberiza schoeniclus*, whinchat *Saxicola rubetra* and whitethroat *Sylvia communis*. Barn owl *Tyto alba* use the Site for hunting and it provides a wintering area for greylag geese *Anser anser* and Canada geese *Branta canadensis*, woodcock *Scolopax rusticola* and harriers.	Outside the Site, adjacent to the western part of the Site boundary.
Tir Pori Traian LWS	Two fields of semi-improved neutral grassland. The grasslands support crested dog's-tail *Cynosurus cristatus*, bent grasses *Agrostis* sp., sweet vernal-grass *Anthoxanthum odoratum*, Yorkshire fog *Holcus lanatus*, red fescue *Festuca rubra* and heath-grass *Danthonia decumbens*. Herbs present include common knapweed *Centaurea nigra*, bird's-foot trefoil *Lotus corniculatus*, yarrow *Achillea millefolium*, field wood-rush *Luzula campestris* and tormentil *Potentilla erecta*.	Adjacent to the north-eastern corner of the Site (at SH401843).
Cors Tre'r Ddol LWS	An area of marshy grassland, reed bed and willow scrub at the confluence of two streams. Most of the grassland is dominated by tufted hair-grass *Deschampsia cespitosa* and meadowsweet *Filipendula ulmaria*. Other species present include greater tussock-sedge *Carex paniculata*, soft rush *Juncus effusus*, Yorkshire fog, yellow flag *Iris pseudacorus*, bogbean *Menyanthes trifoliata*, wild angelica *Angelica sylvestris*, sneezewort *Achillea ptarmica*, yellow rattle *Rhinanthus minor* and northern marsh orchid *Dactylorhiza purpurella*. The site is also used by snipe, sedge warbler and reed bunting	1.04km to the south of the Site.

8.50 Evaluation: Cors-y-Bol LWS and Tir Pori Traian LWS (and other Local Wildlife Sites) are assessed to be of County importance.

Habitats

8.51 Phase 1 habitat survey plans and Target Notes are presented in Appendix 8.1. A summary of the habitat survey results is provided in Table 8.6, below.

8.52 The majority of the Site is grazed pasture; there was one 19ha arable field in the northern part of the Site in 2020; this was being used as a pasture field (improved grassland) in 2023.

8.53 The field boundaries are typically formed by hawthorn-dominated hedgerows with occasional field boundary trees, with some cloddiau (vegetated earth banks) and fences also forming some of the field boundaries. Planted wooded shelterbelts and small patches of woodland and trees occur infrequently, and the landscape is generally open.

8.54 Ponds are a common feature of the area, both within the Site and in the surrounding area. Cors-y-bol, a minor stream that discharges to Llyn Alaw to the north, is fed by minor tributaries which flow through the Site.

Table 8.6: Habitat Baseline Descriptions

Habitat Type	Summary Description	Ecological Importance
Grassland	Agriculturally improved grassland is the main grassland type within the Site (c. 192ha). This has a high proportion of perennial rye-grass *Lolium perenne* and few forbs.	This habitat is assessed to be of negligible ecological importance.

Habitat Type	Summary Description	Ecological Importance
	The species-poor semi-improved grassland (c. 63ha coverage of the Site area) supports relatively low diversity of forbs has a slightly more diverse sward than the improved grassland. The habitat is intensively grazed and lacks structural diversity.	This habitat is assessed to be of ecological importance at a Site level.
	Marshy grassland (c. 14ha coverage of the Site area) is present in edges of pasture fields. Soft rush *Juncus effusus* is dominant, there is evidence of grazing.	This habitat is assessed to be of ecological importance at a Site level.
Scrub	Approximately 2.6ha of the Site supports either dense or scattered scrub. This is dominated by blackthorn *Prunus spinosa*; osier willow *Salix viminalis* is abundant in wetter areas.	This habitat is assessed to be of ecological importance at a Site level.
Woodland	Mixed-plantation woodland makes up approximately 3.2ha of the Site. The mixed plantation includes sitka spruce *Picea sitchensis*, European larch *Larix decidua*, and sycamore *Acer pseudoplatanus*.	This habitat is assessed to be of ecological importance at a Site level.
	A small (<0.5ha) pocket of broadleaved woodland is present. It provides some connectivity to offsite woodland and fen. Species present include ash *Fraxinus excelsior*, sessile oak *Quercus petraea* and Norway maple *Acer platanoides* with a hawthorn *Crataegus monogyna* understory. Broadleaved woodland is also present at the edge of a small rocky outcrop, which is open to sheep grazing. It supports woodland ground flora including bluebell *Hyacinthoides non-scriptus* and lesser celandine *Ficaria verna*.	This habitat is assessed to be of ecological importance at a Local level.
Ponds and Standing Water	Two areas of shallow standing water are present within the Site boundary (Ponds 4 and 11); these are areas that pool with shallow water after rainfall. Pond 4 is often absent but after rain can be up to c. 70m^2 in area; grasses and rushes are present within the footprint of the pond, but no other emergent or aquatic plant species are present. Pond 11 appears to vary between 700 and 7,000m^2 in area (based on historical imagery on Google Earth). The margin of the pool supports poached bare mud with areas of grass and soft rush. Ponds qualify as an Environment (Wales) Act 2016 Section 7 habitat when they meet one or more of the following criteria: • they support species of high conservation importance; • they support exceptional assemblages of key biotic groups; they are of high ecological quality; • or they represent individual ponds or groups of ponds with a limited geographic distribution recognised as important because of their age, rarity of type or landscape context. The ponds within the Site are not considered to meet these criteria. Pond 11, however, is used by wildfowl, generally in low numbers, but wigeon occur in larger flocks in the winter (see birds). There are numerous other ponds in the surrounding landscape, outside the Site boundary. Photographs of ponds and standing water relevant to the Site, and beyond the Site boundary are set out in Appendix 8.3: Great Crested Newt Technical Report.	Pond 11 is assessed to be of county ecological importance (refer to paragraph 8.65 below which relates to Birds for further detail). Pond 4 is assessed to be of Site level ecological importance.
Running Water and Ditches	The Site contains c. 7.5km of running water in small streams or wet ditches, and c. 1.9km of dry ditches. The steams and ditches support a combination of open sections and sections lined with scrub and vegetation. The majority of the ditches are open to grazing livestock and have non-natural courses.	This habitat is assessed to be of ecological importance at a Site level.
Boundary Features	Earth banks: There are c. 7.3km of vegetated earth banks (cloddiau) which form field boundaries. This is a traditional field boundary type in North Wales. Associated vegetation includes heath dog-violet *Viola canina* and foxglove *Digitalis purpurea*.	These earth banks are assessed to be of ecological importance at a Site level.
	Hedgerows: The Site includes c. 0.46km of species-rich hedge, c. 4.95km of species-poor intact hedge, and c. 6.94km of species-poor defunct hedge.	The species-rich hedgerows are assessed to be of ecological importance at a Local level.

Habitat Type	Summary Description	Ecological Importance
	The species-rich hedges include hawthorn, ash, sycamore, blackthorn *Prunus spinosa*, elder *Sambucus nigra*, and grey willow *Salix cinerea*. The species-poor and defunct hedges are formed predominantly by hawthorn. The intact hedgerows qualify as an Environment (Wales) Act 2016 Section 7 habitat and provide linkages and connectivity across the Site to adjacent habitats.	The species poor hedgerows are assessed to be of ecological importance at a Site level.
Acid Rock/Scree	There are several small natural rock outcrops within the central/western part of the Site and some old quarry workings Exposed rock and scree occurs within the Nantanog geological SSSI, a small rocky ravine, which is adjacent to the Site boundary and surrounded by the Site. Inland rock outcrop and scree habitats are a Section 7 habitat. Rocky outcrops are common across Anglesey; the exposures on the Site (away from the geological SSSI) are considered to be of low ecological value – they occur within an area of heavily grazed pasture; they do not support ungrazed or characteristic cliff vegetation.	The rock outcrops are assessed to be of importance at a Site level.

Protected and Priority Species

8.55 This section describes and assesses the Site's importance for protected and priority species. Further information on protected species is provided in Appendix 8.1: Ecological Appraisal.

8.56 The Environment (Wales) Act 2016 (Section 6) 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. Section 7 includes a list of species that are of principal importance for the purpose of maintaining and enhancing biodiversity in Wales; these need to be considered in relation to this duty, and where appropriate are identified below. The legal protection afforded to species is summarised where relevant below.

Badger

8.57 Badgers and their setts receive legal protection under the Protection of Badgers Act 1992[xii]. Cofnod provided no records for badger within 2km of the Site.

8.58 Suitable habitat for badgers is present within the Site (i.e. scrub, hedgerows, small patches of woodland for sett creation). No badger setts or field signs (such as tracks, snuffle hole, or latrines) were recorded during the extended Phase 1 Habitat survey.

8.59 The Site is assessed to be of negligible ecological importance for this species.

Bats

8.60 Cofnod provided local records of the following species: soprano pipistrelle *Pipistrellus pygmaeus*, common pipistrelle *Pipistrellus pipistrellus*, brown long-eared bat *Plecotus auritus*, Daubenton's bat *Myotis daubentonii*, and noctule bat *Nyctalus noctula.* No records of roosts were provided from the Site. From the records, the nearest known roost is approximately 1km to the east (a soprano pipistrelle and brown long-eared bat roost in a farm building).

8.61 All species listed the above, with the exception of Daubenton's bat, are Section 7 species. Bats and their roosts receive protection under the Wildlife & Countryside Act 1981 (as amended) and the Conservation of Habitats & Species Regulations 2017 (as amended).

8.62 One group of derelict structures is present within the Site, comprising two roofless barns with gaps in the stone walls where mortar is missing. This is assessed to have some suitability (low potential) for roosting bats.

8.63 A number of other buildings are present close to, but outside of the Site boundary, including the farm buildings at Nantanog, which have potential to support roosting bats. A small group of trees within the

Site also has some suitability for roosting bats. These features are described further in Appendix 8.1: Ecological Appraisal.

8.64 The Site provides habitat suitable for foraging and commuting bats, although the large, open pasture fields, which are the main habitat feature within the Site, are assessed to be of limited suitability for bats. Within the Site, features likely to be of greater value for bats include hedgerows, scrub, small patches of woodland, and ponds; these are also common features in the surrounding landscape. Given the general character of the Site, which is typical of the surrounding landscape, it is assessed to be of importance to bats at the Site/Local level.

Birds

8.65 An appraisal of the use of the Site by birds has been provided in Appendix 8.2: Bird Report. Summaries of the findings are provided below.

Breeding Birds

8.66 The Site is dominated by open heavily grazed-pasture that supports very few ground-nesting birds. There are localised areas of habitat within the Site which are of greater value for birds, including hedgerows, scrub, small patches of woodland, and wetland habitats on the margins of the Site.

8.67 The assemblage includes Section 7 species (linnet *Linaria cannabina*, skylark *Alauda arvensis*, song thrush *Turdus philomelos*, reed bunting *Emberiza schoeniclus*) and species on the red and amber lists[4] (Bladwell *et al*., 2018[xiii]) (a full list is provided in Table 8.3, Appendix 8.2). These can be broadly assigned to four categories: those species that require scrub, hedgerows, and small patches of woodland (linnet, song thrush, willow warbler *Phylloscopus trochilus*, and whitethroat *Sylvia communis*); those that use wetland habitat and scrub (reed bunting); those species that are associated with ponds and waterbodies (mallard *Anas plathyrynchos*); and those that use open fields for nesting (skylark, meadow pipit *Anthus pratensis*).

8.68 With respect to the last category, few birds are breeding within the open fields in the Site: meadow pipit and skylark were recorded occasionally and in very low numbers and were absent from the majority of the Site. Barn owl was not recorded during the surveys. Further information is provided in Appendix 8.2.

8.69 Given the size of the Site and the presence of red list species, primarily in boundary features and localised areas of habitat, the Site is assessed to be of importance at a Local level for breeding birds.

Wintering Birds

8.70 The flash/pool at Nantanog, referred to as Pond 11, is regularly used by birds in winter. It is a shallow pool in open fields. Few wintering birds of any type were recorded from other parts of the Site. Further information is provided in Appendix 8.2.

8.71 An account of birds referred to in the Llyn Alaw SSSI citation that were observed using the Site during wintering bird survey is detailed in Table 6, Appendix 8.2. The key species (those for which Llyn Alaw SSSI supports around 1% of the British population) are teal, shoveler and whooper swan:

- Whooper swan was not recorded from the Site or flying over the Site (or indeed from part of Llyn Alaw that was viewed during the surveys).
- Shoveler was recorded once, just to the north of Pond 11; one bird was present on 23 November 2020.

[44] The Welsh Red List for birds (Bladwell *et al*., 2018) uses standardised criteria to assign bird species to the Red, Amber or Green lists of conservation concern. Red-list species are of high conservation concern; Amber-list species are of medium concern, Green-list species are not of conservation concern. There is overlap between Section 7 species and the Red and Amber-lists.

- Teal was recorded from Pond 11 (Nantanog pool/ flash) and the immediately adjacent fields. It was present on seven of nine visits; typically, fewer than six birds were recorded (a maximum count 15, was recorded from Pond 11 in December 2020).

- No movements of birds between Llyn Alaw and the Site were recorded.

8.72 The Site is not assessed to be of importance for the key bird species referred to in the Llyn Alaw SSSI citation.

8.73 Pond 11 was used by other wildfowl species, typically in low numbers (mallard *Anas platyrhyncos*, and tufted duck *Aythya fuligula*), but was found to support greater numbers of wigeon *Anas penelope* (a flock of 95 - 140 individuals was present on four visits between late-October and December 2020; this species was not present during two visits in January 2021; 30-41 birds were present in February and March 2021).

8.74 Wigeon is a common winter visitor mainly to areas of tidal and freshwater bodies (Cambrian Ornithological Society, 2020); it predominantly occurs between late September/October and March[5]. Counts are made at numerous sites across Anglesey and large numbers of wigeon are present in winter months[xiv]. Several sites on Anglesey, such as Inland Sea & Alaw Estuary/Cymyran-Beddmanarch, Malltraeth, and RSPB Valley wetlands, regularly support large numbers of wigeon (i.e. several hundred, or well over 1,000 birds. Llyn Alaw regularly supports counts of 200 birds, and occasionally over 1,000 birds[xv]. In this context, the numbers of wigeon recorded from Pond 11 are considered to be of county (i.e. Anglesey) importance.

8.75 Waders were also recorded from the margins of Pond 11: lapwing *Vanellus vanellus* (a maximum of 60 birds, but typically smaller numbers, were recorded on five of the nine visits) and golden plover *Pluvialis apricaria* (recorded twice, one flock of 30 birds, and two individuals), greenshank *Tringa nebularia* (one bird in January 2021), oystercatcher *Haematopus ostralegus* (two birds in March 2021), snipe *Gallinago gallinago* (typically around 10 birds, although 33 were recorded on one visit; this species was also occasionally recorded from other areas of the Site, typically in wetter areas).

8.76 Of the two more regularly recorded species, lapwing is an abundant winter visitor to Anglesey; thousands of birds typically occur annually (Cambrian Ornithological Society, 2020); and snipe is a common passage migrant and winter visitor (Cambrian Ornithological Society, 2020).

8.77 Gulls were frequently observed; mainly herring gull *Larus argentatus* and black-headed gull *Chroicocephalus ridibundus*. Most gulls were generally noted as loafing (e.g. resting in groups) on Site rather than feeding. Very few raptors were recorded; peregrine *Falco peregrinus* and buzzard *Buteo buteo* were both recorded once in flight above the Site. Barn owl was not recorded during the surveys.

8.78 Chough is a section 7 species. It is a rare species[6] which nests on sea cliffs on Anglesey (for which Holy Island Coast SPA is classified) but ranges more widely in winter (Pritchard *et al*. 2021[xvi]). Data from Cofnod includes seven chough records; these are from between 2006 and 2010 and relate to small groups of birds from a 1km grid quare (SH3980) which at its closest point is c. 1.5km to the south of the Site; the precise location of the records is not specified. The Welsh Chough Project holds no records of choughs feeding at the Site or in immediately surrounding areas. There are generally very few records from the interior of Anglesey, away from Parys Mountain and Llyn Traffwll (Adrienne Stratford, pers. comm., refer to Appendix 8.9). Chough was not recorded during any of the surveys.

8.79 Greenland white-fronted goose *Anser albifrons flavirostris* is a rare species that breeds in Greenland and winters on the west coast of Britain and Ireland. It is listed on Annex 1 of the EC Birds Directive; it is a Section 7 species. It was not recorded during the surveys, either from the Site, from adjacent fields, or from Llyn Alaw. The results of the Echoes Project obtained to date show that the Anglesey Greenland white-fronted goose population moves between two areas: the northern part of Llyn Alaw (outside the winter bird survey area) and two areas of farmland close to the northern end of Llyn Alaw (where birds feed on improved pasture); and an area in the vicinity of Afon Cefni approximately 15km to the south-east (of the Site). From the data gathered by the Echoes Project to date, there is no indication that the Site is being used by this species; the areas from which birds have been detected to the north of Llyn Alaw

[5] Source: https://app.bto.org/webs-reporting/numbers.jsp?locid=LOC649898

[6] Pritchard *et al*. (2021) refers to 39 confirmed pairs on Anglesey in 2015-19 (max of 41); with 235 pairs (max of 258) in Wales across the same period.

appear to be used with some consistency. The Site is not visible from areas used by the geese (the bay in the north-east part of Llyn Alaw and the fields to the north).

8.80 The birds are considered to be site-faithful (i.e. they typically return to the same areas year after year) and therefore the existing data is considered likely to be broadly representative of typical use/habitat selection. Since the data are just from one winter, it is not possible to rule out the use of other fields, and patterns of use may vary from year to year. However, although the radio-tagging work has ceased, visual observation in the Afon Cefni area, suggest that the birds are continuing to use the same fields. Further information is provided in Appendix 8.2.

8.81 The majority of the Site is assessed to be of importance for wintering birds at the Site level. Pond 11 is assessed to be importance at a County level, primarily because it regularly supports a flock of wigeon, and is used by other waders and wildfowl, although in smaller numbers.

Great Crested Newt

8.82 Great crested newt is a Section 7 species; it also receives protection under the Wildlife & Countryside Act 1981 (as amended) and the Conservation of Habitats & Species Regulations 2017 (as amended).

8.83 None of the ponds within the Site support great crested newt. A positive eDNA survey result was returned from one pond within the wider survey area in 2020 (Pond 7, which is located approximately 32m from the Site boundary).

8.84 Pond 7 was subject to a population class assessment survey in spring 2021. A female great crested newt was recorded on Visit 5 (on 9th June 2021). This species was not recorded on any other visit. This survey was repeated in spring 2023, where 2 males and 1 female great crested newt were recorded. The survey results suggest that the population associated with this pond is very small.

8.85 Two additional ponds returned a positive eDNA result in 2023 (Pond 3 and Pond 8). Pond 3 is a shallow depression which is full of vegetation (soft rush); it supports no areas of open water. It was dry in 2023 but was holding some shallow water when the eDNA sample was taken in mid-May 2023. It was completely dry again by 30th May 2023, and is not considered to be a breeding pond. It is approximately 50m to the west of the Site. Pond 8 was assessed to have poor suitability for great crested newt when the HSI assessment was undertaken. It is approximately 40m to the north-west of the Site and used by wildfowl. This held water during the 2020 survey work, but the eDNA result then was negative. Following a positive eDNA result in 2023. the pond was surveyed twice by torching – it has a rocky base and pond does not support vegetation and could be fully surveyed by torching; no further evidence of great crested newt was identified. Given the previous negative result, and lack of any other evidence of use, this pond is considered unlikely to be used as a breeding pond. The 2023 survey results are considered to confirm the previous assessment that this species is present in the local landscape but occurs at a very low density.

8.86 Suitable terrestrial habitat for great crested newt exists on the Site in the form of scrub, hedgerows and drystone walls, and patches of marshy grassland. The most suitable habitats are typically within boundary features; the improved and poor semi-improved grassland within the fields is close-grazed and does not offer much structure, cover or places to shelter, and is therefore considered to be of limited suitability for great crested newt.

8.87 Further information is presented the Great Crested Newt Report (Appendix 8.3).

8.88 Given the survey results the Site is assessed to be of importance to great crested newt at the Site level.

Other Amphibians

8.89 The data search returned records for palmate newt *Lissotriton helveticus*, common toad *Bufo bufo* (a Section 7 species), and common frog *Rana temporaria* within 2km of the Site. A female palmate newt was recorded in Pond 7 during survey work; no other amphibians were recorded. Habitats within the Site are considered likely to be of ecological importance to other amphibian species at the Site level.

Reptiles

8.90 The data search returned historical records for adder *Vipera berus*, grass snake *Natrix helvetica*; slow worm *Anguis fragilis*; common lizard *Zootoca vivipara* within 2km of the Site. No records were provided for the Site. All of the above species are Section 7 species and receive partial protection under the Wildlife & Countryside Act 1981 (as amended).

8.91 The improved and poor semi-improved grassland within the fields is close-grazed and does not offer much structure, cover or places to shelter, and is therefore considered to be of limited suitability for reptiles. Habitats within the Site that are suitable for reptiles include woodland, scrub, rough grassland at field edges and earth banks. The habitats present in the wider landscape are generally very similar to those found on the Site. The wetland and scrub adjacent to the Site within Cors-y-Bol LWS provides good habitat.

8.92 The Site is assessed to be important to reptiles at the Site level.

Otter

8.93 Otter is a Section 7 species; it also receives protection under the Wildlife & Countryside Act 1981 (as amended) and the Conservation of Habitats & Species Regulations 2017 (as amended).

8.94 The data search returned four records for otter *Lutra lutra* within 2km of the Site, including a record from Llyn Alaw. None of these records relate to the Site.

8.95 No otter field signs were noted from the Site. The watercourses within the Site are mostly narrow ditches and are unlikely to support the abundance of prey species required to support otters; these are assessed to be of low suitability for otter. The ponds within the Site are assessed to be of low suitability for otter, offering little cover or foraging opportunities, although transient use may possibly occur. The Site is considered to be at most, important to otter at a Site level, although adjacent and nearby habitats (such as Cors-y-bol and Llyn Alaw) are considered to have potential to support this species.

Water Vole

8.96 Water vole is a Section 7 species; it also receives protection under the Wildlife & Countryside Act 1981 (as amended).

8.97 Cofnod provided two local records of water vole from either within, or close to, the Site boundary (precise locations were not provided). These date from 2005 and 2009.

8.98 Wet ditches that are potentially suitable for water vole are present within the Site. Some of these are subject to heavy grazing and poaching by livestock and offer limited cover and food availability. No evidence of presence has been recorded from the watercourses within the Site. Field signs of this species were recorded from Cors-y-bol LWS, which is adjacent to the western Site boundary.

8.99 The presence of a population in Cors-y-bol is likely to be local importance. Although no evidence of this species was recorded from the Site, given the proximity of Cors-y-bol, and since the Site has some (albeit limited) potential to support this species, it is assessed to be ecological importance to water vole at the Site level.

Red Squirrel

8.100 Red squirrel is a Section 7 species; it also receives protection under the Wildlife & Countryside Act 1981 (as amended) and the Conservation of Habitats & Species Regulations 2017 (as amended).

8.101 Cofnod provided one record for red squirrel *Sciurus vulgaris* from 2017 for a location 1.92km east of the Site near the town of Llanerch-y-medd. This species requires woodland habitat. There is limited woodland habitat within the Site and the majority of the Site is considered to offer unsuitable habitat. This species has not been recorded from the Site during the survey work and is not considered further in this assessment.

Invertebrates

8.102 Cofnod provided records for 13 invertebrate species. None of these records are from the Site. The records include Section 7 species (such as small pearl-bordered fritillary *Boloria selene,* dingy skipper *Erynnis tages*, and small heath *Coenonympha pamphilus*). These are all from locations beyond 1km from the Site. Further information is provided in Appendix 8.1.

8.103 The majority of the Site is assessed to be of low value for invertebrates (and does not appear to offer good habitat for the Section 7 species referred to above, which are therefore scoped out from the assessment). Within the context of the Site, the more valuable habitats for invertebrates include scrub, hedgerows, woodland, ponds and watercourses. The Site is assessed to be ecological importance to invertebrates at the Site level.

Hedgehog

8.104 Hedgehog *Erinaceus europaeus* is a Section 7 species. The data search returned 76 records for hedgehog within 2km of the Site (many of which are observations of fatalities on roads). The records range from 2004 and 2019. The closest record is from 2016 for a location approximately 14m east of the Site boundary. Potentially suitable habitats (hedgerow, scrub and woodland, and field edges) occur within the Site. It is considered likely that, given the number of recent local records, hedgehog is also present within the Site.

8.105 The Site supports habitat features that are typical within the local landscape. It is therefore assessed to be of ecological importance to hedgehog at the Site level.

Brown Hare

8.106 Brown hare *Lepus europaeus* is a Section 7 species. Cofnod provided 133 records for brown hare within 2km of the Site, four from within the Site boundary (from fields in the eastern and southern parts of the Site). Brown hare was not recorded from the Site during numerous survey visits.

8.107 The majority of the Site (i.e. grazed pasture with a short, cropped sward) is assessed to offer poor habitat for hare; some more suitable habitat exists in the field edges, tracks, and in any marginal areas of less intensely grazed grassland. Since the Site supports habitat features that are typical within the local landscape, it is assessed to be of ecological importance to hare at the Site level.

Future Baseline

8.108 The future baseline conditions are considered unlikely to vary significantly from the current baseline conditions should the Development not be delivered. This assumes that the Site will continue to be managed as farmland for sheep and cattle grazing.

Summary of Ecological Features and Evaluation

8.109 Table 8.7 summarises the evaluation of ecological features described in the section above.

Table 8.7: Summary of Ecological Features

Feature	Evaluation
Designated Sites	
Llyn Alaw SSSI	National Importance
Cors-y-Bol LWS	County Importance
Tir Pori Traian LWS	County Importance
Nantanog SSSI (geological)	(National Importance for geology only)
Habitats	
Improved Grassland	Negligible
Semi-improved grassland	Site Importance
Marshy grassland	Site Importance
Scrub	Site Importance
Woodland (mixed plantation)	Site Importance
Woodland (broad-leaved)	Local Importance

Feature	Evaluation
Ponds and standing water (Pond 11)	Local Importance
Ponds and standing water (other)	Site Importance
Running water and ditches	Site Importance
Boundary features (earth banks and species-rich hedgerows)	Local Importance
Boundary features (species-poor hedgerows)	Site Importance
Acid rock/scree	Site Importance
Species	
Badger	N/A
Bats	Site Importance
Breeding bird assemblage	Local Importance
Wintering bird assemblage (Pond 11)	County Importance
Wintering bird assemblage (other parts of Site)	Site Importance
Great Crested Newt	Site Importance
Other Amphibians	Site Importance
Reptiles	Site Importance
Otter	Site Importance
Water Vole	Site Importance
Red Squirrel	N/A
Invertebrates	Site Importance
Hedgehog	Site Importance
Brown Hare	Site Importance

Design of the Development and Inherent Mitigation Measures

8.110 This section of the chapter describes the ecological features which have been incorporated into the design of the Development.

8.111 The Development's solar photovoltaic ('PV') panels will be situated within the existing fields (based on the existing field layout). Field boundaries, and existing habitat features (such as hedgerows, streams, ponds, woodland, scrub and marshy grassland) will be retained and have been incorporated into the design.

8.112 Existing access points will be used to avoid the need to create new openings in hedgerows; there may be some minor widening to increase the width of any narrower gaps.

8.113 The Development will connect to the electricity network via the National Grid Substation at Wylfa, as shown on Figure 1.1 of the ES. The connection will be provided by underground cabling located within the adopted highway of local roads and will not affect vegetated areas (with the exception of three short and very narrow sections of verge that will be slightly widened on the road between B5112 and Chwaen Bach, to allow for slightly wider passing places).

8.114 Buffer areas will be incorporated into the design of the Development to protect Nantanog (geological SSSI, Cors-y-bol LWS and Tir Pori Traian LWS, to protect these sites and to provide space for habitat enhancement and management. The buffer for the Nantanog (geological) SSSI will be 10m-wide, as agreed with NRW at the DPAS virtual meeting on 23rd June 2021 (refer to Appendix 8.5). The buffer from Cors-y-bol and the perimeter fence will be at least 15m-wide.

8.115 A 50m-wide buffer will be incorporated between the fence and Pond 11 to provide an open area of grassland for birds around the pond, which will be grazed/mown on a regular rotation, to maintain short-sward, open habitat conditions suitable for grazing wildfowl. The nearest solar PV panels will be over 50m from the edge of the pond.

8.116 New habitat features will be incorporated into the design including native woodland planting, native scrub planting, meadow creation and improved grassland management for wildlife, the creation of areas of rough grassland, hedgerow enhancement (i.e. gapping up/creating a grass-margin/buffer). 14 new ponds will be also created.

8.117 The design of the habitat features will increase habitat connectivity throughout the Site (and promote the resilience of ecosystems, in line with the requirements of PPW). It is also noted that the new features (including new ponds and grassland management) will also improve habitats for great crested newt, in

line with local conservation objectives for this species (source: DPAS virtual meeting with NRW on 23rd June 2021, refer to meeting minutes in Appendix 8.5). These elements of the Development have been designed through close liaison with the project Landscape consultant and wider project team.

8.118 The landscape strategy for the Development is shown on the Landscape Strategy Plan (Figures 7.13 to 7.16 of the ES) and described in the Planting Schedule and Notes (Figure 7.17 of the ES), summarised in Table 8.8 below.

Table 8.8: Summary of New Habitat Features

Feature	Area /length	Notes
Native woodland planting	6.21ha	A range of locally appropriate native species will be used in the planting scheme.
Native scrub planting	1.69ha	A range of locally appropriate native species will be used in the planting scheme.
Meadow grassland (fields)	4.31ha	Grassland areas will be re-seeded and managed using hay meadow-style management (mowing and removal of arisings in late July/August / aftermath grazing in autumn, using an appropriate seed mix, such as Emorsgate EM2 or equivalent). Specific landscape Area 3
	2.54ha	In addition, this habitat type includes Specific Landscape Area 3 – this is an additional 2.52ha.
Grassland management (for wildlife) outside perimeter fence.	46.64ha	Existing grassland outside perimeter fence to be allowed to develop a taller sward, with some tussocks allowed to develop in the margins; cut no more than once annually.
	5.95ha	In addition, this habitat type includes Specific Landscape Area 1 (which includes some gorse clearance to maintain open habitat around Nantanog [geological] SSSI) – this is an additional 5.95ha.
New hedgerow, and existing hedgerow enhancement (gapping up)	4,304m	Locally appropriate native species will be used in the planting scheme.
New ponds	14 no. (0.23ha)	14 new ponds will be created in clusters of 2-3 ponds (equating to 0.23ha of pond habitat). This will be located adjacent to areas of less frequently managed grassland and scrub. Hibernacula will be created nearby to provide additional habitat for reptiles and amphibians. Marginal / riparian planting around pond margins will include c. 0.16ha of additional habitat.
Other areas of retained habitat		
Grassland within proposed perimeter fence	181.51ha	This will be retained grassland between the panels – this is not new habitat. It will be managed by grazing or mowing, or a combination of both.
Specific Landscape Management Area 2	3.5ha	A 50m wide buffer between the perimeter fence and Pond 11 to provide an open area of grassland which will be grazed/mown on a regular rotation, to maintain short-sward, open habitat conditions suitable for grazing wildfowl. This is not new habitat.
Specific Landscape Management Area 4	0.48ha	Cors-y-Bol Scheduled Monument buffer – existing grassland to be maintained as a short sward, cut six times annually. This is not new habitat.

Assessment of Potential Significant Effects

8.119 This section of the assessment considers the potential effects of the Development on ecological features during the construction and operational phases. The assessment has taken into account the Development's layout, its landscape strategy, and the mitigation that has been included as part of the project's design process.

8.120 The assessment of impacts is carried out in stages:

- As detailed in the previous section, identify a) the ecological features that can be scoped out, and b) those that need to be taken forward for further assessment.
- Identify the likely impacts and effects which could arise from the Development construction and operational activities with reference to the ecological features that have been scoped into the assessment.
- Consider impact significance, first in the absence of additional mitigation, and then with additional mitigation, compensation and enhancement taken into account.

Ecological Features Scoped In/Out of the Assessment

8.121 The landscape strategy, which is inherent in the design of the Development, has been devised to enhance the ecological value of the Site, wherever possible to do so. The implementation of this strategy is considered likely to be beneficial to many of the species and species groups listed in Table 8.8 above.

Table 8.9: Ecological Features Scoped Out of the Assessment

Feature	Evaluation	Rationale
Designated Sites		
SACs, SPAs, Ramsar Sites (European Sites)	International importance	There are no European Sites within the Site boundary or within 7km of the Site. The nearest sites, Corsydd Mon / Anglesey Fens SAC / Ramsar Site, and Llyn Dinam SAC; are distant and not ecologically or hydrologically connected to the Site. Other SAC/SPAs are marine and coastal, and therefore not ecologically connected to the Site. No impact pathways have been identified and no likely significant effects on European Sites are likely. Further information is provided in the Habitats Regulations Assessment: No Significant Effects Report submitted in support of the Development of National Significance application.
Llyn Alaw SSSI	National Importance	A direct impact on Llyn Alaw SSSI will not occur. The level of use of the Site by key bird species listed on the SSSI citation is minor (teal), negligible (shoveler) or has not been recorded (whooper swan). The Site is not assessment to be important for the key species referred to in the SSSI citation. Other wildfowl species are considered separately, and these are scoped in (refer to Table 8.10).
Y Werthyr SSSI	National Importance	Construction vehicles will travel along the B5112 between the Site and the A55. Y Werthyr SSSI is located approximately 4.5km southeast of the Site and approximately 80m from the B5112. Since it is within 200m of the construction traffic route it has been considered by the Air Quality assessment (refer to Chapter 11 Air Quality of the ES); this found that air quality effects on this SSSI from the Development's construction phase would be negligible. No direct effects will occur.
Cors-y-Bol LWS	County Importance	There will be no direct impact on Cors-y-bol LWS. There will be no significant change in hydrology. A buffer has been incorporated into the design of the Development, which will include appropriate habitat creation and management adjacent to the LWS. Standard pollution control measures, which are inherent to the Development's design (refer to Chapter 9 Water Environment of the ES), will be prevent the discharge of sediment or other substances into watercourses during the construction phase.
Tir Pori Traian LWS	County Importance	There will be no direct impact on Tir Pori Traian LWS. There will be no significant change in hydrology.

Feature	Evaluation	Rationale
		A buffer has been incorporated into the design of the Development, which will include appropriate habitat creation and management of land abutting the LWS.
Air quality impacts on designated sites	National Importance	As stated in Chapter 11 Air Quality of the ES, impacts of traffic generated by the construction phase of the Development on designated ecological sites have been assessed. The impacts are anticipated to be 'not significant'.
Habitats		
Improved Grassland	Negligible	This is a widespread habitat type of low ecological value. No further assessment is therefore considered necessary.
Poor semi-improved grassland	Site Importance	This is a widespread habitat type of low ecological value. No further assessment is therefore considered necessary.
Marshy grassland	Site Importance	This is a widespread habitat type. It is uniform in character and dominated by soft rush. The majority is being retained through the design of the Development. No further assessment is therefore considered necessary.
Scrub	Site Importance	This is a widespread habitat type. The existing scrub will be retained through the design of the Development, and new scrub will be created. No further assessment is therefore considered necessary.
Woodland (mixed plantation)	Site Importance	The existing woodland will be retained through the design of the Development with a buffer. No further assessment is therefore considered necessary.
Woodland (broad-leaved)	Local Importance	The existing woodland will be retained through the Development's design with a buffer; new woodland will be created. No further assessment is therefore considered necessary.
Ponds and standing water (excluding Pond 11)	Site Importance	The existing ponds will be retained through the Development's design with a buffer. New ponds will be created. No further assessment is therefore considered necessary.
Running water and ditches	Site Importance	The existing streams and ditches will be retained through the Development's design with a buffer. No further assessment is therefore considered necessary.
Boundary features (earth banks and species-rich hedgerows)	Local Importance	The existing boundary features will be retained through the Development's design. Existing access points will be used to avoid the need to create new openings in hedgerows; there may be some minor widening to increase the width of any narrower gaps, but this is not considered to require any further assessment.
Boundary features (species-poor hedgerows)	Site Importance	The existing boundary features will be retained through the Development's design. No further assessment is therefore considered necessary.
Acid rock/scree	Site Importance	The existing features will be retained through the Development's design. No further assessment is therefore considered necessary.
Impacts on habitats from hydrological or water quality impacts	Local Importance	As stated in Chapter 9 Water Environment of the ES, overall, residual effects of the Development with regard to water quality and flood risk is considered to be 'Negligible to Minor Beneficial'.
The underground cabling for the Development's connection to the National Grid Substation at Wylfa	N/A	The connection will be provided by underground cabling located within the adopted highway of local roads and will not affect vegetated areas.
Species		
Badger	N/A	This species has not been recorded from the Site and therefore will not be affected and is scoped out of the impact assessment. NB Since badgers are mobile animals, and need to be considered in relation to development project to ensure legal compliance (The Protection of Badgers Act, 1992) a precautionary pre-construction check for evidence of badger use and the presence of setts will be detailed in a Construction Environment Management Plan ('CEMP') for the Development.
Bats	Site Importance	Existing habitat features suitable for bats will be retained. No roosts will be affected. The Development's landscape strategy will involve the creation of habitat features that are considered likely to improve the value of the Site for foraging and commuting bats.

Feature	Evaluation	Rationale
Wintering bird assemblage (all parts of Site excluding from Pond 11)	Site Importance	The majority of the Site is not used by wintering wildfowl or waders. NB Pond 11 is considered separately in Table 8.10, below.
Other Amphibians	Site Importance	Existing habitat features suitable for amphibians will be retained. The Development's landscape strategy will involve the creation of habitat features that are considered likely to improve the value of the Site for amphibians.
Reptiles	Site Importance	Existing habitat features suitable for reptiles will be retained within the Development. The Development's landscape strategy will involve the creation of habitat features that are considered likely to improve the value of the Site for reptiles.
Otter	Site Importance	This species has not been recorded from the Site and is considered unlikely to be affected and can be scoped out of the assessment.
Water Vole	Site Importance	Existing habitat features suitable for water vole will be retained within the Development.
Red Squirrel	N/A	This species has not been recorded from the Site and therefore will not be affected and can be scoped out of the assessment.
Invertebrates	Site Importance	Existing habitat features suitable for invertebrates will be retained within the Development. The Development's landscape strategy will involve the creation of habitat features (ponds, more varied grassland and scrub habitats) that are considered likely to improve the value of the Site for invertebrates.
Hedgehog	Site Importance	Existing habitat features suitable for hedgehog will be retained within the Development. The Development's landscape strategy will involve the creation of habitat features that are considered likely to improve the value of the Site for hedgehog.
Brown Hare	Site Importance	The majority of existing habitats are of limited value for brown hare. Habitat features suitable for hare will be retained within the Development, including a variety of grassland habitat, scrub and hedgerows.

Table 8.10: Ecological Features Scoped into the Assessment

Feature	Evaluation	Rationale
Designated Sites		
Nantanog (geological) SSSI	National Importance	Nantanog SSSI (a geological SSSI) will not be directly affected by the Development, and its interest features will be protected by a 10m buffer area which has been agreed through consultation with NRW. The Development's solar PV panels will be separated from Nantanog SSSI by fencing. This will allow grazing within the solar PV array, but will affect the ability to graze the ravine. This may give rise to an increase in scrub within the SSSI which could eventually obscure the geological interest features. To ensure that scrub management and vegetation management can be maintained, this feature is taken forward in the assessment. NB This is not a biological SSSI; a significant ecological impact is not anticipated.
Habitats		
Ponds and standing water (Pond 11)	Local Importance	Pond 11 is the area of the Site which is used by wintering wildfowl. The pond has been retained within the Development's design and a 50m-wide buffer has been incorporated around the pond to also include adjacent areas of fields (with the exception of the north end of the pond, which is c. 22m from an existing wall). Construction work in the vicinity of the Pond 11 has potential to disturb birds using the pond. This feature is therefore taken forward in the assessment. NB This feature is combined with the "Wintering bird assemblage (Pond 11) "from this point onwards in the assessment.
Species		
Breeding bird assemblage	Local Importance	Existing habitat features suitable for the majority of breeding bird species will be retained within the Development. There are very few ground nesting birds within the Site. The Development's landscape strategy will involve the creation of habitat features that are likely to improve the value of the Site for the majority of bird species.

Feature	Evaluation	Rationale
		Nesting birds received legal protection and therefore also need to be considered in terms of a legal compliance in relation to site preparation and construction activities. This feature is therefore taken forward in the assessment.
Wintering bird assemblage (Pond 11)	County Importance	Pond 11 is the area of the Site which is used by wintering wildfowl. The pond has been retained within the Development's design and a 50m-wide buffer has been incorporated around the pond to also include adjacent areas of fields (with the exception of the north end of the pond, which is c. 22m from an existing wall). NB The buffer-width was increased to 50m to accommodate an NRW recommendation. Construction work in the vicinity of the Pond 11 has potential to disturb birds using the pond. This feature is therefore taken forward in the assessment.
Great Crested Newt	Site Importance	A small population of this species occurs in Pond 7. Great crested newt is a protected species and therefore needs to be considered in terms of a legal compliance. This species uses other terrestrial habitats when not in ponds; it may use other parts of the Site, but only in very low numbers. Opportunities to improve the habitats within the Site for this species, in line with local conservation objectives for this species, have been incorporated into the Development's design.

Likely Significant Effects

Construction Phase

Nantanog SSSI (geological)

8.122 No significant effects on Nantanog (geological) SSSI are anticipated during the construction phase. Its interest features will be protected by a 10m buffer area which has been agreed through consultation with NRW (with the exception of a very short section of access track at the west tip of the SSSI, which is outside the SSSI but within the 10m buffer). The measures required to protect this area will be set out in a CEMP.

Breeding Birds

8.123 As stated above (Table 8.10), breeding birds are scoped out of the impact assessment based on impact significance (i.e. no significant effects); they are included here with respect to legal compliance only.

8.124 Construction work (site preparation/installation of solar PV panels and cabling) could potentially give rise to an impact on nesting birds if carried out during spring/summer months. This work will primarily occur within fields. As set out above, there are very few ground nesting birds within the Site (two pairs of skylark and four pairs of meadow pipit have been recorded across the Site). Based on the survey results, across the majority of the Site, the likelihood of encountering ground nesting birds is considered to be very low.

Wintering Birds

8.125 The Development will involve the installation of solar PV panels, on either side of Pond 11 (in Fields 32 and 33). A buffer has been incorporated into the Development's design to include both Pond 11 and the retention of a 50m-wide margin of grassland (grazed, improved grassland) around the pond, before the site fence. There will also be an area between the fence and the solar PV panels (5-10m wide) that will not be developed, meaning that approximately 55-60m of grassland habitat will be retained within the Development around the pond (with the exception of the north end of the pond, which is c. 22m from an existing wall). The designed mitigation is intended to minimise habitat loss and ensure the continued use of the pond by wildfowl. The buffer distance has been derived in response to consultation with NRW. The impact significance is Neutral. There is moderate/high confidence in this assessment.

8.126 There is a risk of disturbance leading to displacement of wintering birds if construction work is carried out in the vicinity of Pond 11 between October and March in a given year. Such an impact is likely to be of short duration but could give rise to the temporary displacement of birds while works are undertaken.

Such an impact would be considered to be of significance at Site level only; any disturbed birds are considered likely to relocate to nearby Llyn Alaw.

Great Crested Newt

8.127 Great crested newt is evaluated to be of importance at a Site level only; it is therefore scoped out of the assessment based on impact significance. It is included here with respect to legal compliance only.

8.128 Great crested newt has been recorded from Pond 7. A small population is present: a female newt and no evidence of breeding was recorded.

8.129 The pond will not be affected. The Site boundary is c. 32m from Pond 7 to the east, on the far side of a minor road. The pond is surrounded by suitable terrestrial habitat for great crested newt.

8.130 The nearest fields that will be included within the Development (i.e. those within 250m of Pond 7) support improved grassland; this habitat is assessed to be of limited value for great crested newt.

8.131 The nearest part of the Site that will include solar PV panels will be c. 90m from Pond 7. The part of the Site between 32m and 80m from the pond will be a habitat creation area. This will involve the creation of a cluster of two ponds, and grassland and scrub. This area has been designed to create habitat suitable for great crested newt.

8.132 This is relevant because where suitable habitat is present, great crested newts typically occur at highest densities close to breeding ponds (i.e. within 50m); few occur at greater distances[xvii].

8.133 Positive eDNA results have been recorded in two further ponds, which are outside the Site boundary, but as discussed above, these are not considered likely to be breeding ponds but do confirm the previous assessment that this species is present in the local landscape but occurs at a very low density.

8.134 Given the results of the surveys (i.e. the population in Pond 7 is very small), the presence of suitable habitat around the pond, and the limited suitability of the wider Site, it is considered unlikely that this species will be significantly affected by construction work. Impact significance: Site level only. The likelihood of an impact occurring during construction work is therefore considered to be very low.

Operational Phase

Nantanog SSSI (Geological)

8.135 Scrub encroachment is likely to occur within the [geological] SSSI if grazing is prevented by fencing around the solar array elements of the Development. This will not have a damaging impact on the geological SSSI, and will not give rise to a significant ecological impact, but it would potentially affect the ability to view the geological interest features. Ongoing scrub management is therefore desirable.

8.136 Impact significance has not been assessed as this is not an ecological impact; the approach identified by NRW will require vegetation management and therefore needs to be included in the Landscape Environmental Management Plan ('LEMP') for the Development, to be secured by planning condition. This will set out the detail of the ongoing habitat management which will be achieved by grazing or scrub and vegetation management, or a combination of both.

Breeding Birds

8.137 No impact is anticipated during the operational phase of the Development. The habitat enhancement set out in the Development's landscape strategy is considered likely to be beneficial to a wide range of bird species (i.e. a minor beneficial effect/significant at the Site level).

Wintering Birds

8.138 There is a risk of disturbance to wintering birds if routine management (i.e. vegetation management or maintenance of the solar PV panels or fencing) is carried out in the vicinity of Pond 11 between October and March in any given year. Since any such operations are likely to be temporary and of short duration,

the significance of such disturbance is considered likely to be minor: at the Site level impact significance. This risk could be avoided by carrying out management of grassland (or other routine maintenance) in late summer (between the start of August and early October).

Great Crested Newt

8.139 Effects on great crested are not anticipated during the operational phase. Habitat enhancement will be achieved through the implementation of the Development's landscape strategy, which is likely to be beneficial for this species. Management guidance will be set out within the LEMP, which will include habitat management guidance relevant to great crested newt. This will take into account the legal protection afforded to this species to ensure that legal compliance can be achieved when managing habitats within the Site. The impact significance is Neutral/Beneficial at the Site level.

Mitigation Measures

8.140 This section describes additional measures required to mitigate the effects of the Development that are not incorporated into the Development's design.

Construction Phase

Nantanog SSSI

8.141 No further mitigation is required.

Breeding Birds

8.142 An impact on breeding birds will be avoided through timing of work: any work that could affect nesting habitat for ground nesting birds will take place outside the nesting period.

8.143 As a guide, the bird nesting season is between late February and August inclusive; dates vary by species and can be affected by prevailing weather conditions. The majority of species do not start nesting until March and April.

8.144 Given the bird survey results, this approach is likely to be only required in a few specific areas of the Site. Precautionary, pre-construction survey will be carried out where necessary to determine which areas of the Site this approach will apply to, taking into account the results of existing survey work (refer to Appendix 8.2). The survey will be devised to ensure that the construction programme avoids any areas used by ground nesting birds during the nesting period. This approach is required to achieve legal compliance and will be set out in the CEMP to be implemented during the construction phase of the Development.

8.145 The existing grazing regime will be continued until construction work commences to avoid the risk of creating more favourable conditions for ground nesting birds, through changes in sward length and structure.

Wintering Birds

8.146 A disturbance impact to birds using Pond 11 will be avoided by carrying out construction work in the vicinity of Pond 11 in summer months (between April and late September). This approach will apply to Fields 31, 32 and 33.

Great Crested Newt

8.147 Given the protection afforded to great crested newt, precautionary measures will be implemented during the construction phase for work within 250m of Pond 7 to ensure that the risk of an impact on this species is minimised. These will be set out in a CEMP to be implemented during the construction phase of the Development. Based on the survey results, a NRW licence is considered unlikely to be required, as the likelihood of committing an offence is considered to be very low.

8.148 Similarly, precautionary measures will also be applied to work in other areas of the Site within 250m of Ponds 3 and 8, and any as a precaution any ponds that were not subject to survey (Ponds 22-25, as described in Appendix 8.3). Given the survey results from other parts of the Site, the likelihood of encountering great crested newt is considered to be low. Ponds 22-25 ponds are distant (c. 230-370m from the Site), and surrounded by suitable terrestrial habitat for great crested newt. Work in the areas within 250m of all these ponds is restricted to heavily grazed improved or semi-improved pasture, and the likelihood of an impact is considered to be very low. These precautionary measures will be set out in the CEMP to be implemented during the construction phase of the Development.

Operational Phase

Nantanog SSSI

8.149 Ongoing scrub management will be carried out and integrated into the LEMP for the Development.

Breeding Birds

8.150 No further mitigation is required.

Wintering Birds

8.151 Management of grassland (or other routine maintenance) in the fields around Pond 11 (Fields 32 and 33) will be undertaken in late summer (between the start of August and the end of September) to minimise disturbance to wintering wildfowl.

Great Crested Newt

8.152 No further mitigation is required. The ongoing implementation of the LEMP will ensure that habitat suitable for great newt will be available within the Site, including new ponds and terrestrial habitat, which could give rise to a beneficial impact on this species. Monitoring (eDNA sampling) will take place after five years to determine whether great crested newt has colonised the new ponds. The requirement for this will be set out within the LEMP for the Development.

Residual Effects

8.153 This section describes effects following implementation of the measures set out in the ‘Mitigation Measures’ section of the chapter above.

Construction Phase

Nantanog SSSI

8.154 No ecological impact on the SSSI is anticipated from the Development.

Breeding Birds

8.155 Breeding birds have been scoped out of the assessment of impact significance (as detailed in Table 8.10). The mitigation detailed above will ensure that legal compliance is achieved during the construction phase of the Development.

Wintering Birds

8.156 The additional mitigation set out above will minimise the risk of disturbance of wintering birds during construction activities. Therefore, the residual impact significance from the construction phase of the Development is Neutral.

Great Crested Newt

8.157 Great crested newt has been scoped out of the assessment of impact significance (as detailed in Table 8.10). The mitigation detailed above will ensure that legal compliance is achieved during the construction phase of the Development.

Operational Phase

Nantanog SSSI

8.158 No ecological impact on the SSSI is anticipated from the operational phase of the Development. The scrub management will ensure that the geological interest features are still visible. The residual impact significance from the operational phase of the Development is Neutral.

Breeding Birds

8.159 Breeding birds have been scoped out of the assessment of impact significance. No further mitigation is required to ensure legal compliance during the operational phase of the Development.

Wintering Birds

8.160 The additional mitigation set out above will minimise the risk of disturbance of wintering birds during the operational phase of the Development. The residual impact significance is Neutral.

Great Crested Newt

8.161 Great crested newt has been scoped out of the assessment of impact significance (as detailed in Table 8.10). No further mitigation is required to ensure legal compliance during the operational phase of the Development.

Cumulative Effects

8.162 In accordance with the EIA Regulations, the assessment of the cumulative effects of the Development in combination with the effects of other developments on ecological features have been considered, where possible to do so.

8.163 As set out in Chapter 2 EIA Methodology of the ES, the Development is not anticipated to result in likely significant cumulative environmental effects with other developments, including those on biodiversity. Three of the committed developments identified for consideration in relation to the assessment of the Development's likely significant cumulative effects on the environment are discussed below, due to the nature of these schemes and their distance from the Development. These are Môn Solar Farm; Traffwll Solar Farm (DNS/3217391); and Porth Wen Solar Farm (Ref: 20C310B/EIA/RE). Môn Solar Farm is at the pre-application stage; Traffwll Solar Farm and Port Wen Solar Farm have been consented; the latter is under construction. Further details on the scoping out of the other developments in respect of likely significant cumulative effects on biodiversity is provided in Appendix 2.4 of the ES.

Môn Solar Farm

8.164 Môn Solar Farm is based on three areas of land: Area 1 (land around Rhosgoch) covers a large area between 1.5km and 5km to the north of Llyn Alaw; Area 2 (land adjacent to Llyn Alaw Reservoir) is a large area immediately to the north of Llyn Alaw, including fields along the shore, and fields to the east of Llyn Alaw; Area 3 (south east and south west of Llanerch-y-medd) includes two sub-areas; one 1km to the east of the Site, and the other approximately 4.5km further east.

8.165 Ecological baseline information or impact assessment information for the Môn Solar Farm project is not available. It is noted that Area 2 includes fields adjacent to Llyn Alaw and thus, there may be potential for impacts on birds associated with the SSSI (i.e. waterfowl). There could be potential for an impact on the local white-fronted goose population from development in this area, through displacement through disturbance and habitat loss. The Echoes Project survey data shows that birds regularly roost at the north-west end of Llyn Alaw and use adjacent fields during winter months (refer to Appendix 8.7 and 8.8). It is noted that published information[xviii] states that this scheme is *'We're in the very early stages of this project, and are sharing our plans with local residents and surrounding communities to gain their insight and*

feedback into the land we have identified. Following this early stage engagement, we'll refine our plans and conduct a range of assessments'.

Traffwll Solar Farm

8.166 Traffwll Solar Farm is approximately 8.2km to the south of the Development. It encompasses three parcels of land to the south of the A55. It covers an area of approximately 63ha, and consists of semi-improved grassland and rush pasture, and improved grassland, used for grazing of sheep, cattle and horses, and in some cases cut for silage or hay. The generally small fields are enclosed by hedgerows and ditches, with scattered hedgerow trees, scrub patches and several blocks of woodland occurring between the development areas. The site adjoins the Llyn Dinam SAC and Llynnau y Fali – Valley Lakes SSSI.

8.167 The ES for this scheme[xix] identifies wintering birds as a potential ecological feature that could be affected by temporary disturbance during the construction phase. The Traffwll Solar Farm scheme design includes buffers from suitable habitat features and in some instances timing requirements to avoid wintering periods for some elements of the construction phase. The ES does not identify significant residual impacts on wintering birds; effects are assessed to be negligible once the proposed mitigation is taken into account. Given the stated residual impact significance (negligible/not significant), and the impact significance of the Development on wintering birds (neutral), cumulative effects are not expected. Similarly, there are no adverse residual effects identified in relation to other overlapping ecological features (with the Development), so cumulative effects are not expected. The Traffwll Solar Farm scheme design includes a number of biodiversity and landscape enhancements, including grassland management and hedgerow creation.

Porth Wen Solar Farm

8.168 Porth Wen Solar Farm is approximately 6.7km to the north of the main part of the Development, and over 4km to the north of Llyn Alaw. It includes an area of predominately sheep-grazed pasture across c. 10 fields, just to the south of the A5025. Detailed information regarding ecological impact assessment is not available for this project. The following statement is available from the applicant's project website[xx]:

> ***'Ecological assessments as part of the development showed that there were no significant impacts but as part of the scheme there will be a mile long wildlife corridor and wildflower planting. These improvements will enhance biodiversity at the site... The solar farm will be on 190 acres of land which will still be able to be used for sheep grazing. These improvements will allow for foraging, breeding opportunities and will provide shelter for a variety of wildlife'.***

Consideration of Cumulative Effects

8.169 The Development is not anticipated to result in significant ecological effects. Cumulative impacts on biodiversity from the Development and these schemes are also not anticipated.

8.170 The published information suggests that the Porth Wen Solar Farm and Trafwll Solar Farm schemes will be designed in a way that protects existing features and delivers ecological enhancement.

8.171 Thus, given current planning policy requirements (e.g. secure improvements to ecological resilience), it is assumed that these two schemes, when considered in combination with the Development, may have potential to give rise to a positive effect on some ecological features, particularly if there is a consistent, coherent landscape-scale approach to the design and the features targeted for enhancement.

8.172 Notwithstanding the absence of available information, this could also apply to the Môn Solar Farm scheme, noting that, significantly, this assessment of cumulative effects is based on the assumption that, in addition to meeting general policy requirements relevant to biodiversity (i.e. secure improvements to ecological resilience), effects on white-fronted geese (and other SSSI waterfowl) will be properly considered and avoided through a combination of design and mitigation measures. Given the importance of the local white-fronted geese population, it is assumed that any acceptable scheme would be designed to avoid any risk of displacement, habitat loss and disturbance of geese, particularly in the land to the

north of Llyn Alaw, which may mean that land parcels in this particular area are unsuitable for development.

8.173 In conclusion, based the assumptions outlined above and given the assessment of the Development set out in this chapter, an (adverse) cumulative effect on biodiversity is considered unlikely to occur and likely significant cumulative effects on biodiversity from the Development are not anticipated.

Decommissioning

8.174 The Development's modelled operational lifespan is 40 years, at which point it will be decommissioned and the Site returned to agricultural use. Potential impacts on biodiversity during the decommissioning phase are considered likely to be similar to those identified for the construction phase. The decommissioning phase will be subject to a restoration scheme; this will be informed by an updated ecological survey, and further ecological input where required (if, for example, mitigation measures are required due to the presence of protected species, if identified by the updated ecological survey, or where other measures may be required to comply with planning policy and legislation applicable at the time).

Policy Assessment

8.175 PPW refers to the need for development proposals to secure improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks (there is a similarly-worded policy in Future Wales, and related guidance in TAN5). The landscape strategy for the Development has been designed to improve habitat connectivity within the Site, through protecting existing habitat features, and enhancing these through strengthening hedgerows, providing additional connected areas of scrub, grassland and ponds within the Development's layout.

8.176 This approach is also in line with the Anglesey and Gwynedd Joint Local Development Plan policy AMG 5 which states that *'Proposals must protect and, where appropriate, enhance biodiversity that has been identified as being important to the local area'*. The Development will also *'protect, retain or enhance trees, hedgerows or woodland'*, as required by strategic policy PS 19.

8.177 A further requirement outlined in the Anglesey and Gwynedd Joint Local Development Plan is for a CEMP; this will be prepared to avoid potential negative effects arising during construction (and decommissioning phases).

Further Consideration of Ecosystem Resilience

8.178 The Environment (Wales) Act 2016, the Well-Being of Future Generations Act (Wales) 2015, and the Chief Planner's letter (30th December 2022)[xxi] frame biodiversity with respect to its contribution to achieving "ecosystem resilience". The Environment (Wales) Act 2016 Section 6 duty is referenced throughout the national planning policy guidance, PPW, which states *'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.'*

8.179 NRW is developing a framework for evaluating ecosystem resilience based on five attributes and properties specified in the Environment (Wales) Act 2016. This is referred to as 'DECCA': Diversity, Extent, Condition, Connectivity and Aspects of ecosystem resilience.

8.180 NRW works to the definition of ecosystem resilience published in its State of Natural Resources Report in 2020[xxii], which is: *'An environment that can respond to pressures by resisting, recovering or adapting to change; and is able to continue to provide natural resources and benefits to people.'* When assessing planning applications, PPW instructs planning authorities to take account of and promote the resilience of ecosystems, in particular the five attributes of ecosystem resilience.

8.181 These attributes have been considered in in the Development's layout design and the landscape strategy. A summary of the DECCA attributes (from CIEEM, 2022)[xxiii] is set out below in Table 8.11, together with a summary of how each attribute has been considered and achieved in the Development's design.

Table 8.11: Net benefit and ecosystem resilience

DECCA attributes	How this has been achieved within the Development's design
Diversity: maintaining and enhancing diversity at every scale, including genetic, structural, habitat and between-habitat levels. This supports the complexity of ecosystem functions and interactions that deliver services and benefits.	The fields within the Site support heavily-grazed improved grassland or species-poor semi-improved grassland. This grassland will be retained within the solar PV arrays, other areas of the Site will be protected and enhanced through the Development's landscape strategy. Existing ecological features (hedgerows, woodland, wetland habitat and scrub) within the Site have been retained and incorporated into the design of the Development. New habitats will be created (woodland, grassland, scrub, and ponds) throughout the Site, around the proposed solar PV arrays. This will increase the diversity of habitats within the Site.
Extent: incorporating measures which maintain and increase the area of semi-natural habitat/features and linkages between habitats. In general, smaller ecosystems have reduced capacity to adapt, recover or resist disturbance.	The landscape strategy for the Development has been designed to complement and strengthen the existing ecological features, which are largely defined by field boundaries and adjacent features around the Site's periphery. These features are buffered within the design, throughout the Site with new areas of habitat; linkages between habitats both within and around the Site will be improved. Examples of improvements are given within the bullet points below. Given the scale of the Development, this means that the design will include: 6.21 ha of new woodland planting, 1.69 ha of new native scrub planting, 6.85 ha of meadow grassland, 52.59 ha Grassland around the perimeter develop a taller sward, with some tussocks allowed to develop, 4,304 m of additional hedgerow (both infilling gaps and new sections of hedgerow), 14 (0.23ha) of new ponds and wetland/marginal vegetation. Existing grassland will be retained within the solar PV arrays.
Condition: The condition of an ecosystem is affected by multiple and complex pressures acting both as short term and longer-term types of disturbance. Both direct and wider impacts should be considered, for example avoiding or mitigating pressures such as climate change, pollution, invasive species, land management neglect etc.	Ecological features adjacent to the Site will be buffered from the Development, and new habitats (meadow grassland and scrub) to be created in these areas, which are currently heavily grazed pasture. The buffer areas around the retained features will therefore improve in ecological condition through the implementation of the Development's landscape strategy. Additional ponds will be created, in clusters, surrounded by areas of longer grassland and scrub, which will increase the suitability of the Site for amphibians, increase the network of ponds available. These habitats will be managed to ensure they reach the desired condition and maintain their value for wildlife for the 40-year lifespan of the Development. Details will be set out in the LEMP.
Connectivity: This refers to the links between and within habitats, which may take the form of physical corridors, stepping stones in the landscape, or patches of the same or related vegetation types that together create a network that enables the flow or movement of genes, species and natural resources. Developments should take opportunities to develop functional habitat and ecological networks within and between	The Development's landscape strategy has been designed around the existing ecological features, which are largely defined by field boundaries and adjacent features around the Site's periphery. These features are buffered and strengthened within the design (i.e. hedgerow gapping up, new hedgerows, and creation of meadow grassland in buffer areas adjacent to field boundaries) meaning that linkages between habitats both within and around the Site will be improved. Additional ponds will increase the suitability of the Site for amphibians, by increasing the network of high-quality ponds available.

DECCA attributes	How this has been achieved within the Development's design
ecosystems, building on existing connectivity.	The most suitable habitat for birds is primarily restricted to the field boundaries; the creation of new hedgerows and buffering of existing hedgerows with meadow grassland, together will new woodland and scrub planting, will increase the value of the Site for birds and a range of other wildlife through the provision of additional foraging resources and cover.
Aspects of ecosystem resilience (adaptability, recovery and resistance): ecosystem resilience is a product of the above four attributes. Adaptability, recovery and resistance to/from a disturbance are defining features of ecosystem resilience.	The Development's landscape strategy has been designed to buffer and reinforce the existing features, and to improve habitat connectivity within the Site. It is therefore considered likely to also increase ecosystem resilience within the Site, by increasing habitat area, linkages and opportunities for wildlife in various areas of the Site.

Policy Assessment: Concluding Statement

8.182 Taking into account the Development's design (the landscape design and designed-in mitigation) and the additional mitigation that will be implemented, the Development is considered to be in line with relevant planning policy, as described above and in Chapter 8 Biodiversity of the ES.

Summary

8.183 The assessment within this chapter has been undertaken with reference to the CIEEM Guidelines for Ecological Impact Assessment (CIEEM, 2018). The assessment is supported by a desk study, consultation and survey work.

8.184 The desk study sourced data from Cofnod (North Wales Environmental Information Service), the Welsh Chough Project and from online sources (including MAGIC.gov and aerial photographs). Consultation was carried out with IACC, NRW and the BTO/Echoes Project.

8.185 The survey work has involved 'extended' Phase 1 habitat survey (in 2020, updated in 2021 and 2023); breeding bird survey (in 2020, repeated in 2023); wintering bird survey (winter 2020/21); barn owl survey (2021, repeated 2023) and great crested newt survey (in 2020, 2021 and 2023).

8.186 Effects on European Protected Sites (SACs/SPAs) are scoped out. Nantanog SSSI, a nationally important geological exposure, is located within the Site boundary; it will be excluded and protected (with buffers) from development. Llyn Alaw SSSI, a large waterbody to the north of the Site will not be affected by the Development. Possible effects on white-fronted geese, which use habitats at the north end of Llyn Alaw in the winter, have been considered and impacts are not anticipated. A Local Wildlife Site, Cors-y-bol, in an area immediately to the north will also be protected by buffers within the design of the Development.

8.187 The majority of the Site is grazed pasture. The fields boundaries are typically formed by hedgerows. Small patches of woodland and trees occur infrequently. The landscape is generally open. Ponds are a common feature of the area.

8.188 The Site's grazed-pasture supports very few ground-nesting birds. The hedgerows, scrub, small patches of woodland, and wetland habitats on the margins of the Site, are of greater value for birds. A shallow pool in open fields at Nantanog, referred to as Pond 11, is regularly used by birds in winter, including wildfowl species. Great crested newt is present in Pond 7, in very low numbers and there is no evidence of breeding in any other ponds.

8.189 The Development's solar PV panels will be situated within the existing fields. Field boundaries and existing habitat features (hedgerows, streams, ponds, woodland, scrub and marshy grassland) will be retained and have been incorporated into the Development's design. Buffer areas will protect features of wildlife value and will also provide space for habitat enhancement and management.

8.190 Likely significant effects have been identified for wintering birds; without mitigation a Site-level (Minor Adverse) effect will occur. Mitigation will involve a wider buffer around Pond 11, and construction work (and ongoing management work) in this area will avoid the period, when wintering birds are present to avoid disturbance. The residual impact will be neutral.

8.191 For other features, the impacts will be either neutral or are scoped out. Precautionary mitigation is proposed for protected species (nesting birds, great crested newt) to ensure legal compliance during construction work. The embedded design mitigation and proposed habitat enhancements will increase habitat connectivity throughout the Site and promote the ecosystem resilience, in line with the requirements of PPW.

8.192 Table 8.12, below, contains a summary of the likely significant effects of the Development.

Table 8.12: Table of Significance – Biodiversity

Potential Effect	Nature of Effect (Permanent/Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)
				I	UK	W	R	C	B	L	
Construction Phase											
Effects on Wintering Birds (Pond 11)	Temporary	Site level (Minor); Adverse	Design mitigation and timing of work to avoid disturbance							X	Neutral
Operational Phase											
Effects on Wintering birds (Pond 11)	Temporary	Site level (Minor); Adverse	Design mitigation and timing of work to avoid disturbance							X	Neutral
Cumulative Effects											
None identified											

*** Geographical Level of Importance**
I = International; UK = United Kingdom; W = Wales; R = Regional; C = County; B -= Borough; L = Local

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