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Llanelltyd SSP

Preliminary Ecological Appraisal

Final Report

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Natural Resources Wales

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This report describes work commissioned by Natural Resources Wales (NRW). Hannah Webster of JBA Consulting carried out this work.

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The methodology adopted and the sources of information used by JBA in providing its services are outlined in this Report. The work described in this Report was undertaken in February 2026 and is based on the conditions encountered and the information available during the said period. The scope of this Report and the services are accordingly factually limited by these circumstances.

Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.

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Abbreviations

BCT	Bat Conservation Trust
CIEEM	Chartered Institute of Ecology and Environmental Management
EPS	European Protected Species
GIS	Geographic Information System
INNS	Invasive Non-Native Species
JNCC	Joint Nature Conservation Committee
LERC	Local Environmental Records Centre Wales
MAGIC	Multi-Agency Geographic Information for the Countryside
NGR	National Grid Reference
NRW	Natural Resources Wales
PEA	Preliminary Ecological Appraisal
PPS	Protected and Priority Species
PRF	Potential Roosting Feature
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
UKHab	UK Habitat Classification
WCA	Wildlife and Countryside Act

1 Introduction

1.1 Project Background

JBA Consulting was commissioned by National Resources Wales (NRW) to undertake a Preliminary Ecological Appraisal (PEA) in relation to the proposed removal of a section of failed sheet piling on the banks of the Afon Mawddach at Llanelltyd, near Dolgellau, North Wales.

The survey was commissioned to provide baseline data and identify any likely ecological constraints to the proposed scheme. Where applicable, recommendations for further surveys, mitigation and ecological enhancements have been provided, in relation to the ecological receptors likely to be impacted upon.

1.2 Site Location

The site is located approximately 700m downstream of where the A470 road crosses the Afon Mawddach at the village of Llanelltyd, and immediately upstream of the confluence where the Afon Wnion meets the Afon Mawddach. The failed section of sheet pile is located at national grid reference SH 71189 19082. The site location and survey boundary are shown below in Figure 1-1.

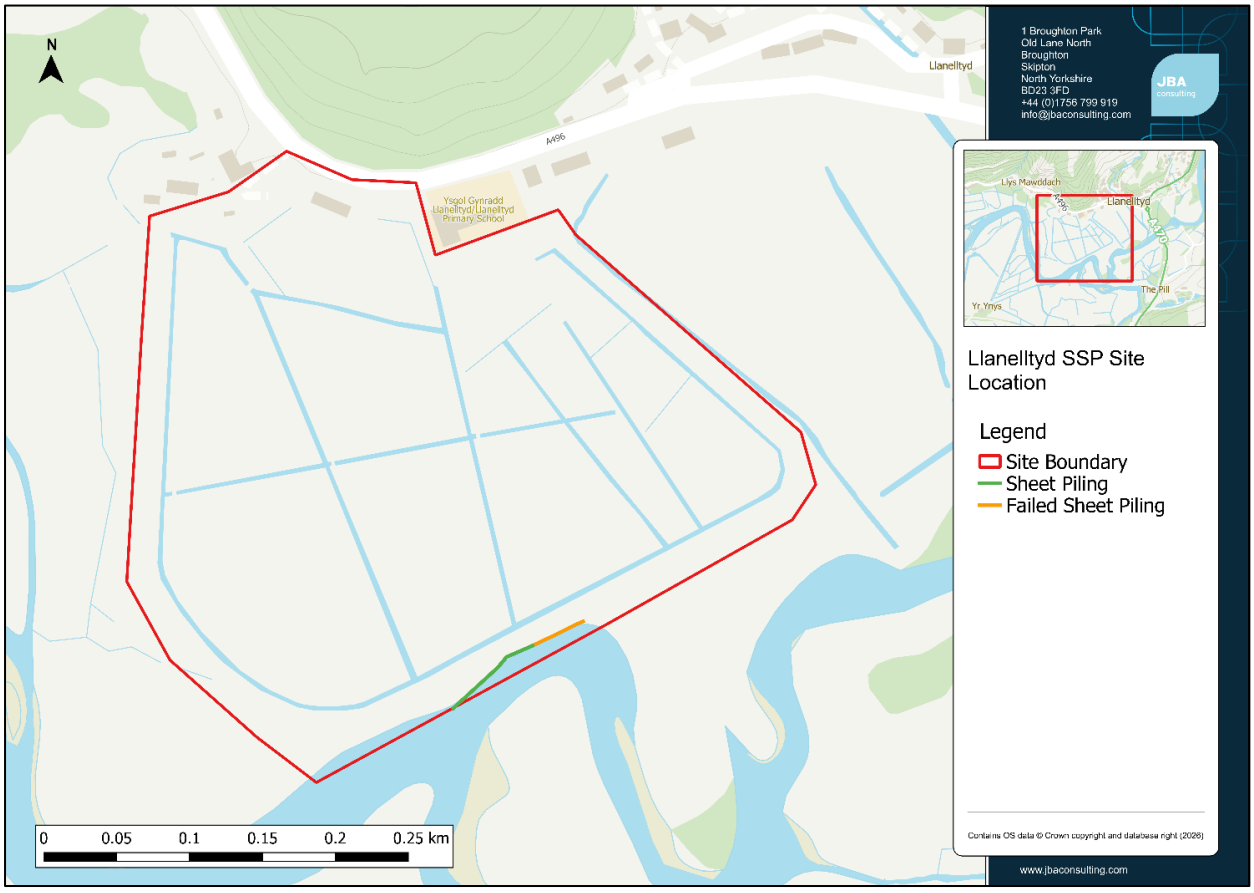

Figure 1-1. Site location and survey boundary.

1.3 Proposed Works

A 30m section of sheet piling has catastrophically failed along the right bank of the Afon Mawddach leaving the sheet piling foundations exposed. The sheet pling was originally protecting part of a 1000m long earth embankment that acts as an informal flood bund for the farmland behind it. This embankment, the sheet piling and an outfall are an NRW legacy asset, so are inspected every 2 years, however the assets are not classed as a formal flood defence. The project aims to achieve a solution which eliminates future liability, withdraw maintenance obligations, address health & safety and reach an agreement with the landowner. This project will ensure that NRW is meeting its regulatory and legal duties. The scope covers the removal of the failed 30m length of piles within the study area.

The project is currently at the optioneering stage, and a detailed outline of the proposed works and method statement is not currently available and therefore this PEA should be reviewed and updated where necessary once a method statement has been confirmed.

Access to the failed section of sheet pile will likely be gained through farmland to the north of the flood bund as shown in Figure 1-2.

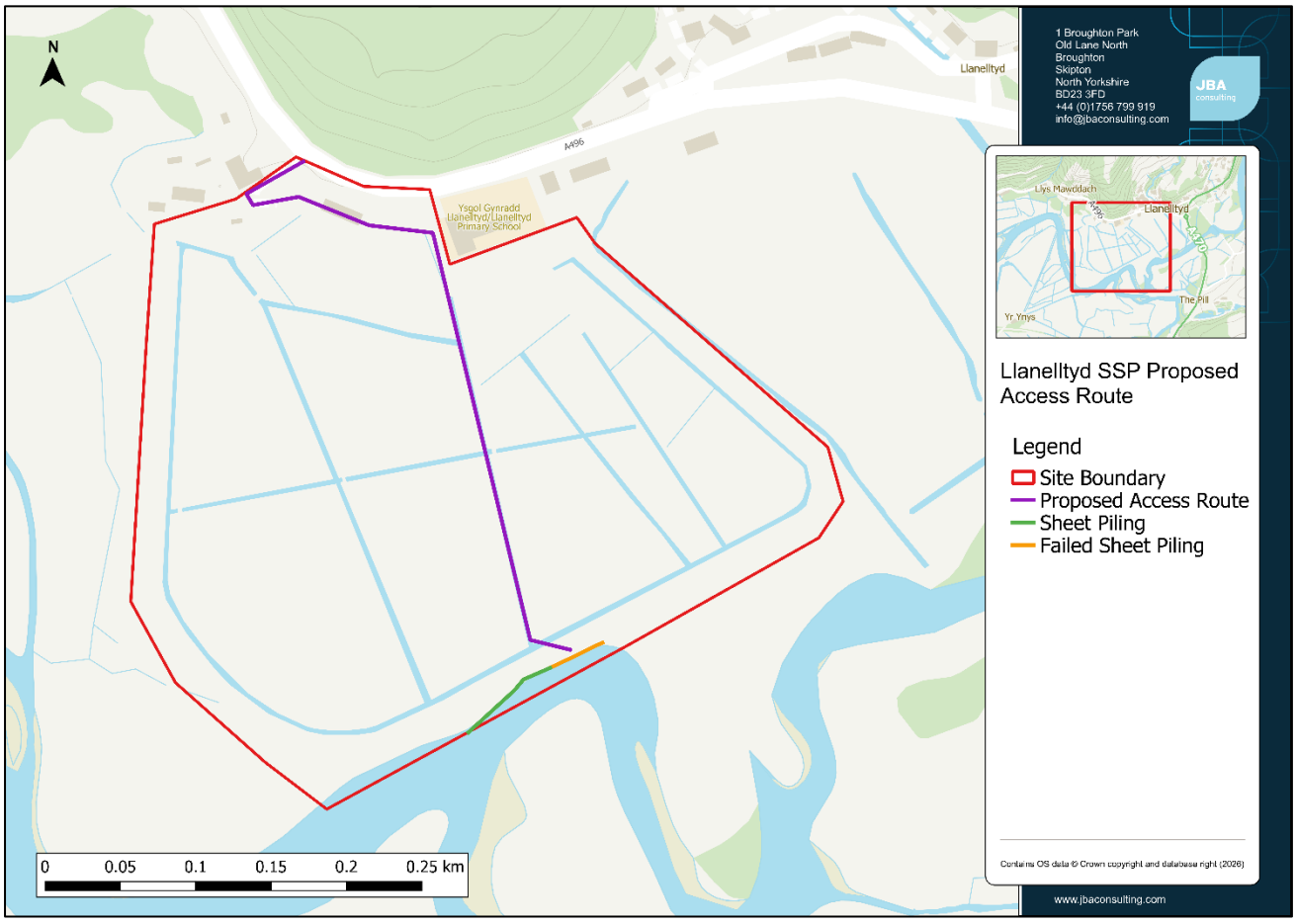

Figure 1-2. Proposed access route.

2 Methods

A PEA of the site has been undertaken in line with current best practice guidance (CIEEM, 2017) and included:

- A desk-based assessment to identify any records of protected and/or priority habitats and species, and designated nature conservation sites in the vicinity of the proposed works.
- A site survey comprising a habitat survey using the UK Habitat Classification (UKHab) and an assessment of the possible presence of protected or priority species, and (where relevant) an assessment of the likely importance of habitat features present for such species.
- An assessment of the potential impacts of the works on the habitats and species present at the site and the surrounding areas.

2.1 Desk-Based Assessment

Prior to undertaking the site survey, searches of databases containing ecological records, priority habitats, and information on statutory and non-statutory designated sites were made. The following sources were included in these searches:

- MAGIC mapping service (www.magic.gov.uk)
- Natural Resources Wales GIS data
- Biological records data held by the Local Environmental Records Centre (LERC) Wales provided by NRW

Due to the size of the site and the nature of the works, it is considered that the zone of influence would be 2km from the failed section of sheet pile (NGR SH 71189 19082) and therefore the desk-based assessment was conducted within this search area.

2.2 Site Survey

A site survey was undertaken on the 17th of February 2026 by JBA ecologist Hannah Webster. The survey included the site boundary as outlined in Figure 1-1 above.

The PEA was based upon a UKHab Survey, conducted using the UK Habitat classification (UKHab) system. The method was extended to identify any features suitable for use by legally protected or notable species and locate evidence for their presence or likely absence based on standard techniques.

2.2.1 Habitats

Habitats were mapped using the UK Habitat Classification scheme (UKHab Ltd 2023). Secondary codes were added where relevant to provide information on the management and environment relating to any particular habitat parcel. The classification was made using surveyor judgement by eye, with a species list collected for each of the main habitat parcels.

2.2.2 Protected and Notable Species

Habitats were also assessed for their potential to support any legally protected species or species of conservation concern and any incidental faunal sightings, or field signs discovered during the survey, were recorded. The following sections provide further details on the assessments undertaken in relation to specific species. Legislative guidance relating to protected species is outlined in Appendix A, along with details of other relevant policy and legislation.

2.2.2.1 Birds

Vegetation and habitats around the site were assessed for their suitability to support nesting birds. Special consideration was given to bird species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). Furthermore, any birds seen or heard on site during the survey were recorded as incidental observations.

2.2.2.2 Badger

The survey area was searched for signs of Badgers *Meles meles*, and where evidence was found details were recorded following Harris *et al*. (1989). In addition to recording the presence of setts and the level of activity at them, the following signs of activity were also searched for: latrines, footprints, evidence of feeding activity and well-worn paths through vegetation. Badgers will use a number of setts throughout their territory at different times of year; any large holes with the potential to be used by Badgers, but not showing obvious signs of recent activity, were therefore also recorded.

2.2.2.3 Bats

Structures and trees likely to be impacted by the proposed scheme were inspected during a Daytime Bat Walkover (DBW) to observe, assess, and record any habitats suitable for bats to roost, commute and forage both on site and in the surrounding area using the methods specified in the Bat Conservation Trust (BCT) guidelines (Collins, 2023).

Structures, trees, and other features that could be suitable for bats to roost in and any habitats that could be suitable for bats to commute, forage or swarm in/ at were assessed for potential suitability following the below guidance provided by the BCT Guidelines.

Evidence indicating the existence of a bat roost includes bat droppings, urine staining/ dark stains running below holes or cracks, odours, feeding remains, scratch marks, and

dead/alive bats. However, roosting bats may still be present without any external evidence being recorded.

Furthermore, the suitability of habitats across the site to support commuting and foraging bats was assessed in terms of habitat type, abundance, connectivity, and distribution. These were categorised as having either 'none', 'negligible', 'low', 'moderate' or 'high' suitability for bats which was determined by applying the categories given within the BCT Guidelines (see Table 2-1).

Table 2-1. Guidelines for assessing the potential suitability of proposed development sites for bats (Collins, 2023).

Suitability	Roosting habitats	Potential flightpaths and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines or generate/shelter insect populations available to foraging bats).
Negligible[1]	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site but could be used by individual hibernating bats).	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.

1 Negligible - 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attirubte) but it is unlikely that they actually would (due to another attritbute).

Suitability	Roosting habitats	Potential flightpaths and foraging habitats
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions[2] and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

The information displayed in Table 2-1 does not reflect the same classifications for trees, therefore, Table 2-2 demonstrates the appropriate classification of PRFs for trees - 'NONE', 'FAR', or 'PRF'. PRFs on trees include cracks/splits, crevices, rot cavities, fluting, loose bark, woodpecker holes and areas of Ivy *Hedera helix*.

Table 2-2. Guidelines for assessing the suitability of trees on proposed development sites for bats (Collins, 2023).

Suitability	Description
None	Either no PRFs in the tree or highly unlikely to be any
FAR	Further assessment required to establish if PRFs are present in the tree
PRF	A tree with at least one PRF present

2 e.g. in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

2.2.2.4 Otter

Watercourses and surrounding areas within the site were assessed for their potential to support Otter *Lutra lutra*, based on RSPB (1994) and Chanin (2003). This involved walking the survey section and recording any spraints (droppings), slides, feeding remains and footprints. A search was also made for possible holt and couch (resting) sites. Otters can be extremely difficult to observe, and this method provides the most effective and efficient means of investigating presence or absence.

2.2.2.5 Water Vole

The field survey assessed watercourse suitability for Water Vole *Arvicola amphibius*, based on initial habitat assessment criteria outlined in Dean *et al*. (2016). The assessment of habitat suitability for Water Vole is based on the availability and nature of dry areas above water level for burrowing/nesting (e.g. bank profile, bank substrate), vegetation (i.e. the quantity and cover of herbaceous species) and the presence of water.

Any field signs observed within the survey area, informed by Strachan *et al*. (2011), were also noted. The most important, diagnostic field sign for Water Vole is the presence of latrine sites. These are locations repeatedly used by Water Vole to deposit their droppings, often in prominent locations along the bank. Other field signs include the presence of burrows, feeding sites and footprints. Although these other signs provide indications of presence and are useful supporting evidence to latrines, they are of limited value on their own.

2.2.2.6 Great Crested Newt

Habitat features with the potential to support Great Crested Newt *Triturus cristatus*, and other amphibians, were recorded. Such features can include: ponds and other waterbodies with habitat suitable for breeding newts within 500m of the proposed works; piles of logs, stones or other debris; cracks in the ground; stone or rubble covered ground, and any other features that could support newts.

2.2.2.7 Reptiles

As part of the site survey, an assessment of the habitat suitability for common reptiles was made. This involved inspection of the site for key habitat features/microhabitats which may be favoured by reptiles, such as embankments, log, brash or rock piles, dry stone walls, hedgerows, open sandy areas, woodland edges and rides and interfaces between different habitat types (Sewell et al. 2013).

2.2.2.8 Invertebrates

An assessment of the habitat suitability for invertebrates was made, involving the identification of key habitats and features which may be favoured by invertebrates, such as flower-rich grassland, areas of early successional habitat, wetland, scrub, mature / veteran

trees, aquatic vegetation, river margins and habitat mosaics (Natural England 2005; Buglife 2015).

2.2.2.9 Fish

A preliminary assessment of habitat suitability for fish was made along the watercourses, including assessing flow rate, depth, and riverbed substrate, where possible. Any impediments to fish passage were also noted.

2.2.3 Other Priority Species and Environmental Constraints

During the site survey, any signs or sightings of other notable species were also recorded. In addition, any environmental features that might constrain the works were also recorded (e.g., access restrictions).

2.2.4 Invasive non-native species

Any Invasive Non-native Species (INNS) observed during the survey were recorded. For stand-forming plant species, the extents of such stands were noted.

2.3 Limitations

The habitats and species present in a given area are subject to change over time. A single field visit of this nature captures and reports the situation at the time of survey. As such, the advice contained within this report is considered valid for a period of 18 months before a review or an updated survey/assessment must be made by an ecologist (CIEEM 2019).

Data from biological records centres or online databases is historical information, and datasets might be incomplete, inaccurate, or missing. It is important to note that even where data is held, a lack of records for a defined geographical area does not necessarily mean that the species is absent; the area may simply be under-recorded. As such, records cannot be relied on and serve only as an indication of what might/ might not be found.

The survey was conducted in February, a suboptimal time of year to find field signs and for botanical identification. Therefore, there is potential that protected and notable species may have been overlooked and are present to a greater extent than were recorded during the survey.

3 Results and Evaluation

3.1 Desk-Based Assessment

3.1.1 Statutory and Non-Statutory Designated Sites

A search via the MAGIC database (www.magic.gov.uk) showed that there are a total of nine statutory designated sites within 2km of the proposed site. These include three Special Areas of Conservation (SAC's) and five Sites of Special Scientific Interest (SSSI's). The site is also located within Eryri (Snowdonia) National Park.

These statutory designated sites and their qualifying features are outlined below in Table 3-1 and are mapped in Figure 3-1and Figure 3-2.

Table 3-1: Statutory designated sites within 2km of site.

Site Name	Qualifying Features	Proximity to Site
Special Areas of Conservation		
Pen Llŷn a'r Sarnau/ Lleyn Peninsula and the Sarnau	**Annex I habitats; primary reason for selection:** - 1110 Sandbanks which are slightly covered by sea water all the time - 1130 Estuaries - 1150 Coastal lagoons - 1160 Large shallow inlets and bays - 1170 Reefs **Annex I habitats; not primary reason for selection:** -1140 Mudflats and sandflats not covered by seawater at low tide -1310 *Salicornia* and other annuals colonizing mud and sand -1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) -8330 Submerged or partially submerged sea caves **Annex II species; not primary reason for selection:** -1349 Bottlenose dolphin *Tursiops truncatus* -1355 Otter *Lutra lutra* -1364 Grey seal *Halichoerus grypus*	Within site
Afon Eden - Cors Goch Trawsfynydd	**Annex I habitats; not primary reason for selection:** -7110 Active raised bogs	0.65km East

Site Name	Qualifying Features	Proximity to Site
	Annex II species; primary reason for selection: -1029 Freshwater pearl mussel *Margaritifera margaritifera* -1831 Floating water-plantain *Luronium natans* **Annex II species; not primary reason for selection:** -1106 Atlantic salmon *Salmo salar* -1355 Otter *Lutra lutra*	
Coedydd Derw a Safleoedd Ystlumod Meirion/ Meirionnydd Oakwoods and Bat Sites	**Annex I habitats; primary reason for selection:** -91A0 Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles -91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) **Annex I habitats; not primary reason for selection:** -3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation -4010 Northern Atlantic wet heaths with *Erica tetralix* -4030 European dry heaths -9180 *Tilio-Acerion* forests of slopes, screes and ravines -91D0 Bog woodland **Annex II species; primary reason for selection:** -1303 Lesser horseshoe bat *Rhinolophus hipposideros*	1.7km South
Sites of Special Scientific Interest		

Site Name	Qualifying Features	Proximity to Site
Aber Mawddach / Mawddach Estuary	Aber Mawddach / Mawddach Estuary is of special interest for its biological features. The site includes the Mawddach estuary itself, a large shallow estuary draining south westwards into Cardigan Bay, as well as adjacent habitats. The estuary is wide with extensive sandflats throughout its length, areas of muddy sediments and large areas of saltmarsh. The special features of the site are the estuarine habitats, particularly muddy sediments and saltmarshes, reed beds and raised mire. There is also a substantial species interest, including breeding wading birds, scarce vascular plants, bryophytes and invertebrates.	Within site
Foel Ispri	Foel Ispri Mine is located on the northern flank of the Mawddach Valley, approximately 4 km north-west of Dolgellau, and is one of numerous mines in the vicinity which lie within the Dolgellau Gold Belt. The site is of special scientific interest for the study of in situ mineralisation and associated wall-rock alteration as well as facilitating investigations into the mechanism of lode emplacement in various types of rock.	0.65km North
Bryn y Gwin Isaf	Bryn-y-gwin Isaf is of special interest as an important breeding roost of the Lesser Horseshoe bat *Rhinolophus hipposideros*. The building is a grade II listed early 19th century "Plas", situated 1.5 km west of Dolgellau overlooking the Afon Mawddach. The site comprises the main house, which supports the nursery roost, and roof spaces of associated dwellings which are used as satellite and night roosts. The grounds and associated woodland, which are used as feeding habitat by Lesser Horseshoe bats, are also within the site.	1.2km South

Site Name	Qualifying Features	Proximity to Site
Llwyn-iarth	Llwyn-iarth is of special interest for its species-rich neutral grassland and for its large population of wood bitter-vetch *Vicia orobus*. Also of special interest are the extensive areas of flush and fen, and the mixture of habitats, which includes wet heath, marshy and acid grassland.	1.3km Southwest
Penmaenuchaf Hall	Penmaenuchaf Hall is of special interest as a breeding roost of the Lesser Horseshoe bat *Rhinolophus hipposideros*. The Hall is a 19th century country house situated 3 km west of Dolgellau at an altitude of 40 m overlooking the Afon Mawddach. The site comprises the roof space of the Hall and a five metre buffer zone around the building. The building also supports a breeding roost of Brown Long-eared bats *Plecotus auritus*. Natterer's bats *Myotis nattereri*, Pipistrelle bats *Pippistrellus pippistrellus* and Whiskered/Brant's bats *Myotis mystacinus/brandtii* have also been recorded at the site.	1.4km West
National Park		
Eryri/ Snowdonia	Eryri (Snowdonia) National Park, designated in 1951, is characterised by its 823 square miles of diverse landscape, including nine mountain ranges and 15 peaks. It is defined by its dramatic glacial landforms, 23 miles of coastline, ancient Celtic rainforests and rich Welsh cultural heritage Eryri is home to 22 National Nature Reserves and 115 Sites of Special Scientific Interest, highlighting its tremendous biodiversity.	Within site

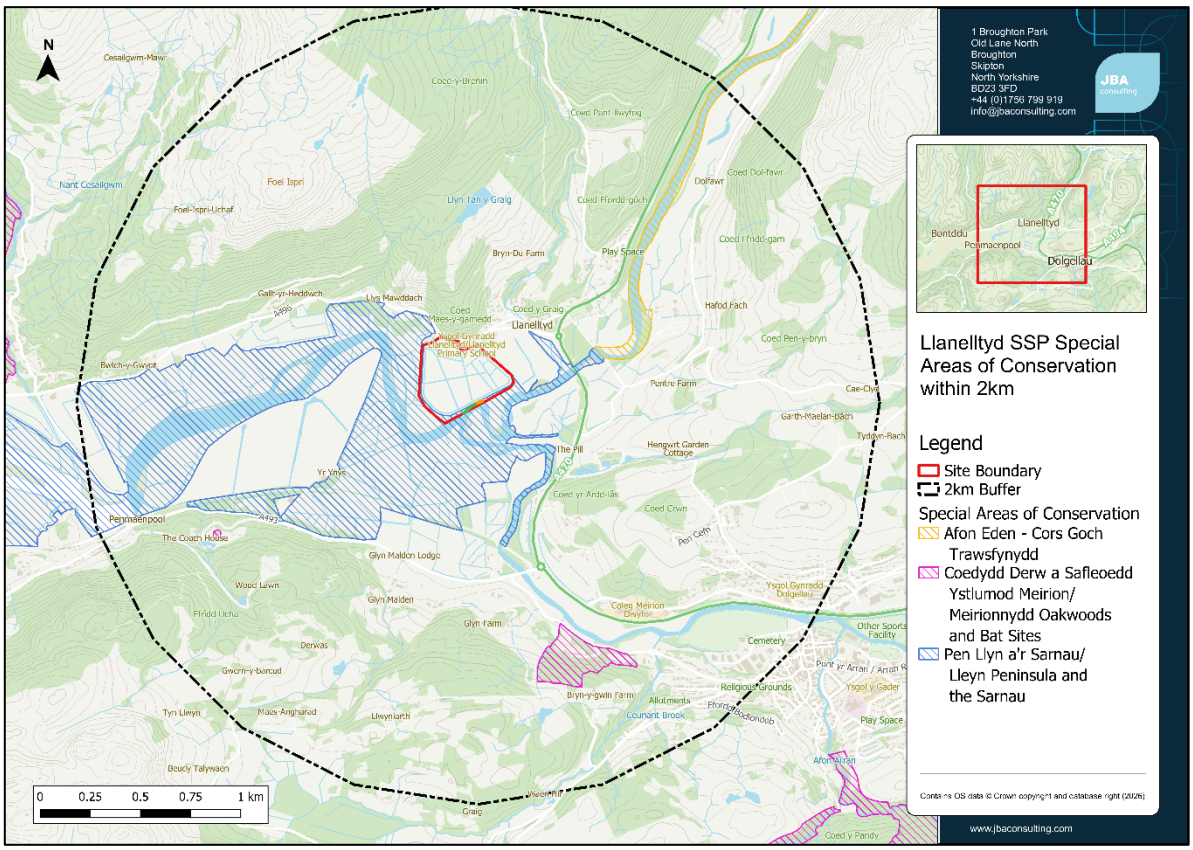

Figure 3-1. Special Areas of Conservation within 2km of the proposed site.

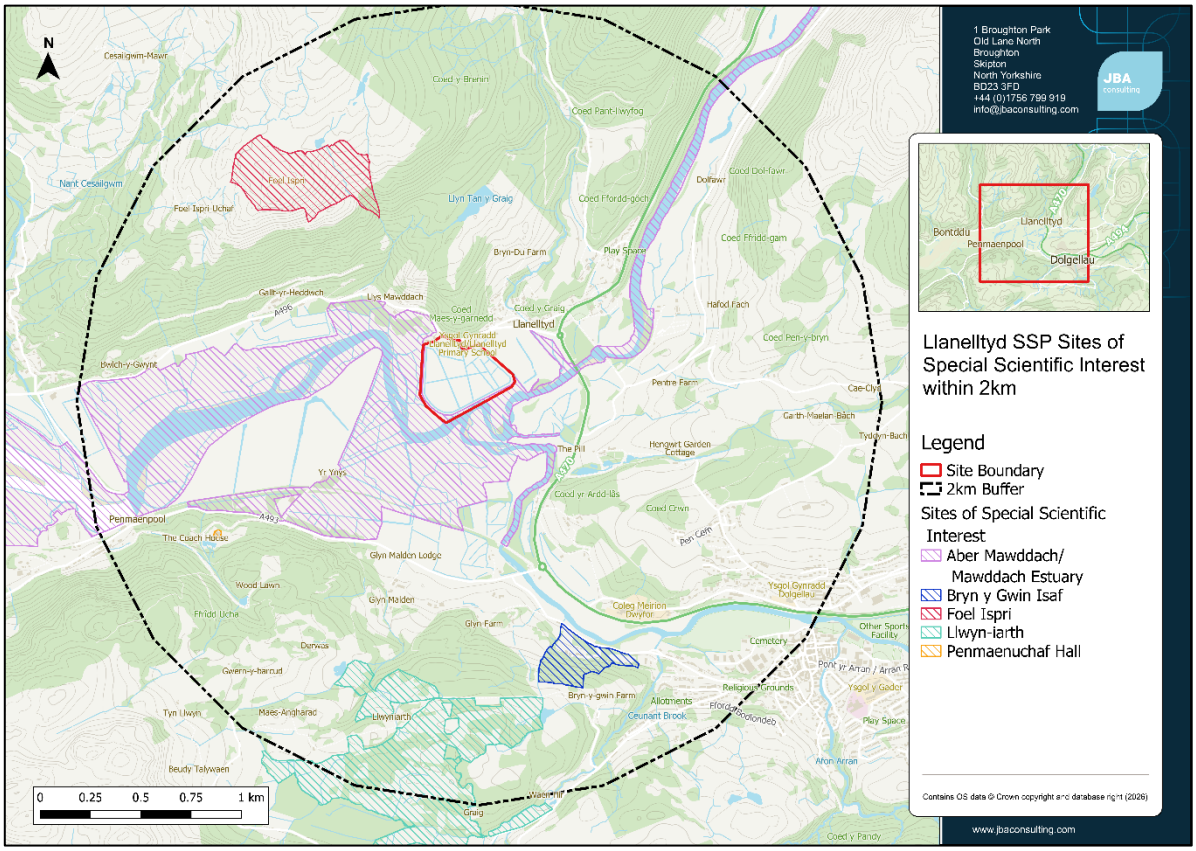

Figure 3-2. Sites of Special Scientific Interest within 2km of the proposed site.

3.1.2 Non-Statutory Designated Sites

The data search from Local Environmental Records Centre (LERC) Wales provided by NRW did not identify any non-statutory designated sites within 2km of the proposed site.

3.1.3 Protected Species

Details of the relevant protected species records held by LERC within 2km of the proposed site are outlined below in Table 3-2. Details of the legislative context and proximity of the records are also provided. Only records submitted after 2000 are considered. Where multiple records exist the closest to the site is included.

Table 3-2. Protected species records held by LERC within 2km of the site.

Scientific Name	Common Name	Designation	Distance from Site
Birds			
Tyto alba	Barn Owl	WCA1, WCA9	Within site
Fringilla montifringilla	Brambling	WCA1	0.7km
Cettia cetti	Cetti's Warbler	WCA1	0.4km
Loxia curvirostra	Crossbill	WCA1	1.4km
Accipiter gentilis	Goshawk	WCA1, WCA9	1km
Tringa ochropus	Green Sandpiper	WCA1, WCA9	1.7km
Circus cyaneus	Hen Harrier	BDir1, WCA1	1.5km
Falco subbuteo	Hobby	WCA1	0.3km
Alcedo atthis	Kingfisher	WCA1	0.15km
Falco columbarius	Merlin	BDir1, WCA1	Within site
Pandion haliaetus	Osprey	BDir1, WCA1	0.05km
Falco peregrinus	Peregrine	BDir1, WCA1	0.2km
Milvus milvus	Red Kite	BDir1, WCA1	0.1km
Turdus iliacus	Redwing	BDir22, WCA1	0.4km
Mammals			
Plecotus auritus	Brown Long-eared Bat	EPS, HDir, WCA5	0.7km
Pipistrellus pipistrellus	Common Pipistrelle	EPS, HDir, WCA5	0.4km
Myotis daubentonii	Daubenton's Bat	EPS, HDir, WCA5	0.6km
Rhinolophus ferrumequinum	Greater Horseshoe Bat	EPS, HDir, WCA5	1.2km
Rhinolophus hipposideros	Lesser Horseshoe Bat	EPS, HDir, WCA5	0.3km
Pipistrellus nathusii	Nathusius's Pipistrelle	EPS, HDir, WCA5	1.2km

Scientific Name	Common Name	Designation	Distance from Site
Myotis nattereri	Natterer's Bat	EPS, HDir, WCA5	1.3km
Nyctalus noctula	Noctule	EPS, HDir, WCA5	0.025km
Pipistrellus pygmaeus	Soprano Pipistrelle	EPS, HDir, WCA5	0.4km
Myotis mystacinus	Whiskered Bat	EPS, HDir, WCA5	1.2km
Meles meles	Badger	Protection of Badgers Act 1992	0.3km
Lutra lutra	Otter	EPS, HDir, WCA5	0.05km
Reptiles and Amphibians			
Rana temporaria	Common Frog	WCA5	1km
Bufo bufo	Common Toad	WCA5	1.7km
Lissotriton helveticus	Palmate Newt	WCA5	0.6km
Zootoca vivipara	Common Lizard	WCA5	0.5km
Anguis fragilis	Slow-worm	WCA5	0.2km
Invasive Non-Native Species			
Impatiens glandulifera	Himalayan Balsam	WCA9	0.3km
Fallopia japonica	Japanese Knotweed	WCA9	0.03
Rhododendron ponticum	Rhododendron	WCA9	0.1km
Neovison vison	American Mink	WCA9	0.2km
Key			
WCA1	Wildlife and Countryside Act; Schedule 1		
WCA5	Wildlife and Countryside Act; Schedule 5		
WCA9	Wildlife and Countryside Act; Schedule 9		
HDir	Habitats Directive		
EPS	European Protected Species		
BDir1	Birds Directive Annex 1		

3.2 UKHab Survey

3.2.1 Habitats

g4 - Modified grassland

The majority of the site comprises of improved grassland that forms a poorly drained permanent pasture. The grassland is regularly grazed by both cattle and sheep and is heavily waterlogged in areas. Soils at the site comprise of Loamy and clayey floodplain soils with naturally high groundwater, which leads to the site being very wet and having naturally poor drainage.

The vegetation is fairly species poor and is dominated by Yorkshire Fog *Holcus lanatus* and Soft Rush *Juncus effusus*. Purple Moor-grass *Molinia caerulea* was also recorded in small patches. Mosses including *Rhytidiadelphus squarrosus* and *Polytrichum spp*. were also recorded.

f2b - Purple moor-grass and rush pasture

One of the field parcels towards the southeast of the site that has been subject to less grazing pressure is dominated by Purple Moor-grass *Molinia caerulea* with Soft Rush also abundant, Sharp-flowered Rush *Juncus acutiflorus* was also recorded. A lack of herb species was noted however this could be due to the time of year the survey was conducted.

w1f - Lowland mixed deciduous woodland

Across the site there are a number of stands of tree groups dominated by Pedunculate Oak *Quercus robur*. There are also a number of mature and semi-mature individual trees spread across the site and along the banks of the main ditch bordering the site. Species include Ash *Fraxinus excelsior*, Oak, Birch *Betula pubescens*, Hazel *Corylus avellana* and Willow *Salix Sp*.

h3e - Gorse scrub

Along the southern boundary of the flood embankment there are patches of scrub dominated Gorse *Ulex europaeus*. These patches are fairly sporadic and scattered stands of Bramble *Rubus fruticosus agg*. was also occasionally recorded.

r2b - Other rivers and streams

The Afon Mawddach runs along the southern extent of the site boundary and is a low-lying gravel bed river and is underlain by the Maentwrog Formation-Mudstone, siltstone and sandstone bed rock formation. The Mawddach catchment generally consists of bed rock that has very low permeability and is relatively steep, leading to a flashy response during periods of heavy rain.

The riparian zone is dominated with scattered scrub and short grass vegetation dominated by Soft Rush and Gorse. Tree species including Ash, Oak and Willows are also present along the riverbank.

r1;50 - Ditch

A large ditch runs around the perimeter of the site, it is fringed by Common Reed *Phragmites australis* which dominates the banks of the watercourse leaving a channel of approximately 2m still visible. In the channel itself some floating macrophytes were observed including the broadleaved Pondweed *Potamogeton natans*.

There are a number of smaller drainage ditches that cut through the site, these are dominated by Soft Rush and also support sedges including *Carex pseudocyperus*.

3.2.2 Protected and Notable Species

3.2.2.1 Birds

The data search returned records for a range of bird species, including several Schedule 1 species. The mature trees within and surrounding the site, and grassland and scrub habitats within the site boundary, provide suitable nesting and foraging habitat for a range of species including raptors, corvids, passerines and ground-nesting species.

Incidental sightings duriing the site walkover included Red Kite *Milvus milvus,* Buzzard and Grey Heron *Ardea cinerea*.

3.2.2.2 Badger

No signs of Badger (including setts, runs, latrines etc.) were recorded during the walkover survey, however the areas of grassland and scrub throughout the survey area provides suitable foraging habitat for Badger. A number of Badger records were returned in the desk study with the closest being approximately 0.3km from site.

3.2.2.3 Bats

The desk study returned numerous records for bat species within 2km of the site including Common Pipistrelle, Soprano Pipistrelle, Nathusius's Pipistrelle, Brown Long-eared bat, Daubenton's Bat, Noctule bat, Natterer's bat, Whiskered Bat, Greater Horseshoe Bat and Lesser Horseshoe bat.

A number of mature and semi-mature trees on site have the potential to provide potential roosting opportunities for bats. Buildings associated with the farm and primary school present along the proposed access track also have the potential to support roosting bats however a detailed assessment for roosting potential was not carried out.

Mature trees, scrub, grassland and the Afon Mawddach watercourse itself provide suitable foraging and commuting habitat for a range of bat species, and the site is considered to have moderate bat potential for this purpose.

3.2.2.4 Otter

No direct evidence of Otter *Lutra lutra* such as spraints, holts or resting sites were observed during the survey. The Afon Mawddach and ditches present within the site provides suitable

Otter commuting and foraging habitat, particularly where trees and scrub along the banks provide cover as well as potential holt-building habitats however this is restricted around the sheet piled section aong the right bank of the Afon Mawddach. The desk study returned a number of Otter records within 2km of the study area with the closest record located 50metres from the site boundary.

3.2.2.5 Water Vole

The ditches present within site have the potential to provide suitable habitat for Water Vole with soft earth banks that are suitable for burrowing and vegetation present suitable for refuge and foraging. The Afon Mawddach was deemed unsuitable to support Water Vole due to it's fast flow and lack of in-channel vegetation. The sheet piling present on the right bank within the site also reduces the ability for Water Vole to form burrows.

No Water Vole field signs or burrows were observed during the survey; however the survey was completed in February, a time when Water Vole activity is low. There are no records of Water Vole within 2km of the site. The desk study returned a number of records for American Mink within close proximity to the site; American Mink predate on Water Vole and therefore the presence of Mink in the area could reduce the potential that Water Vole are present on site.

3.2.2.6 Amphibians including Great Crested Newt

Records for a number of amphibians within 2km of the site were returned in the desk study including Common Frog, Common Toad and Palmate Newt. Terrestrial habitat suitable for amphibians is present on site in the form of grassland and areas of scrub with ditches and flushes on site providing suitable breeding habitat for amphibian species including Great Crested Newt.

3.2.2.7 Reptiles

Suitable reptile habitat for breeding and hibernating is present within the survey area in the form of woodland and scrub, whilst the open grassland habitats offer suitable basking opportunities. Tree debris and fallen branches could provide cover and a food source for reptiles. The desk study returned records for reptiles within 2km of the site including Slow-Worm and Common Lizard.

3.2.2.8 Invertebrates

The habitats within the site are likely to support a range of invertebrate species. Suitable habitats present include grassland, woodland and scrub. Tree debris and piles of dead wood within the site likely provide good habitat for saprophytic invertebrates. The Afon Mawddach and standing water habitats are also likely to support an abundance of aquatic invertebrates.

3.2.2.9 Fish

The Afon Mawddach is known to support a range of fish with species recorded including Allis shad *Alosa alosa,* Twaite shad *Alosa fallax*, Sea Lamprey *Petromyzon marinus*, and a good spawning population of Atlantic salmon *Salmo salar*. Suitable spawning habitat was recorded both upstream and downstream of the section of sheet piles in the form of clean gravels and pebbles.

3.2.2.10 Invasive Non-Native Species

No Invasive Non-Native Species (INNS) were recorded during the site walkover; however the walkover was conducted in February, a time when many invasive plants are inconspicuous or have altogether died back. Records for Himalayan balsam, Japanese Knotweed and Rhododendron within close proximity to the site were returned in the desk study. The desk study also returned a number of records for American Mink within close proximity to the site.

4 Conclusions and recommendations

4.1 Conclusions

The project is currently at the optioneering stage, and a detailed outline of the proposed works and method statement is not currently available and therefore this PEA should be reviewed and updated where necessary once a method statement has been confirmed.

The site is rural and dominated by agricultural land with habitats consisting of modified grassland, Purple Moor-grass and rush pasture, lowland mixed deciduous woodland, scrub, ditches and the Afon Mawddach river.

Habitats present on or adjacent to the site have the potential to support a number of protected and notable species such as breeding and foraging bird populations, Badger, bats, Otter, Water Vole, amphibians, reptiles, aquatic and terrestrial invertebrates, amphibians and fish species.

4.2 Recommendations

The following recommendations are made in order to avoid and/or mitigate against the potential ecological impacts of the proposed works. These recommendations are made in the absence of a final works method statement and therefore this PEA should be reviewed when a method statement and has been agreed.

4.2.1 Designated Sites

The proposed works are located within the Pen Llŷn a'r Sarnau/ Lleyn Peninsula and the Sarnau SAC and the Aber Mawddach / Mawddach Estuary SSSI with a further two SAC's and four SSSI's located within 2km of the proposed works. There is potential that works could impact habitats and species of these sites with potential impacts including damage to habitats listed as qualifying features of the designations indirectly through pollution events. Disturbance to qualifying species of the designations could also be possible. Therefore, a Habitats Regulations Assessment (HRA) will be required to determine the potential for likely significant effects on the designated sites outlined above.

4.2.2 Habitats

The proposed works have the potential to result in the temporary loss of habitats however this will be restricted to the proposed access track through the farmland and the right bank of the Afon Mawddach along the section of failed sheet pile proposed for removal. Vegetation clearance may be required in order to provide construction access to the sheet pile which may consist of scrub and some small scale tree removal.

It is recommended the initial design concepts reduce the permanent loss of habitats wherever possible and that any permanent loss of habitat is compensated for.

4.2.3 Protected and Notable Species

4.2.3.1 Birds

Habitats within the site boundary and surrounding area provide foraging and nesting opportunities for birds. Therefore, precautionary measures for vegetation clearance should be put in place to safeguard nesting birds. Where possible, all vegetation clearance should be undertaken outside the main breeding season (i.e. between October and February inclusive). Where this is not possible, all vegetation clearance should be supervised by an experienced ecologist. Any identified nests will be safeguarded until the chicks have fledged to ensure there are no direct impacts upon nesting birds.

4.2.3.2 Badger

There were no signs of Badger activity or setts recorded during the survey however suitable foraging habitat is present within the scheme boundary. Therefore, general precautions for larger mammals should be followed:

- Any holes/trenches should be covered overnight or left with a ramp at one end, to avoid animals falling in and becoming trapped.
- Any pipes on site should have their ends capped.
- The work site should be left in a tidy state, with no equipment or materials left that could cause harm or trap animals.
- Fencing should avoid blocking access to commuting routes within the work area.

4.2.3.3 Bats

Habitats within the scheme boundary have the potential to be used by commuting and foraging bats and therefore, where possible, works should be carried out in daylight hours between late March and October. If works must be carried out during this period at night, any artificial worksite lighting should be minimised. Any floodlights should be fitted with a directional cowl to avoid light-spill onto the watercourses and surrounding woodland habitats.

As the proposed works are currently understood no trees are proposed for removal or will be impacted by the proposed works. However, if this changes a Preliminary Roost Assessment (PRA) will be required by a suitably qualified ecologist. If the assessment deem the impacted trees to have Potential Roost Features (PRFs) further surveys will be required.

4.2.3.4 Otter

Otter records have been identified within close proximity to the survey area and it is likely that Otter use the Afon Mawddach and ditches on site for commuting and/or foraging. Works near the watercourse should not be undertaken at night and the river should not be illuminated by lighting, such as security lights, during works. Excavations left overnight should either be covered, or an escape ramp installed to prevent the trapping of animals

such as Otter. Should an Otter be encountered on site during the works, all works should cease immediately, and advice be obtained from an experienced ecologist. A pre-works check should be completed as close to the construction works starting as possible in order to identify any potential new holts or resting areas within the proposed site.

4.2.3.5 Water Vole

There were no signs of Water Vole recorded during the survey however habitats present within the ditches present within the site boundary were deemed potentially suitable for Water Vole. As the proposed works are currently understood the ditches will not be impacted by the proposed works however, if this changes Water Vole surveys will be required to determine if Water Vole are present within the site. This should include at least two survey visits to search for burrows and signs with a 2-month gap between the surveys, conducted during the period of mid-April to September to coincide with their active breeding season.

4.2.3.6 Amphibians including Great Crested Newt

Suitable terrestrial and breeding habitat for amphibians including Great Crested Newt (GCN) is present on within the site. Further surveys will therefore be required to determine the presence or likely absence of GCN within the site including Environmental DNA (eDNA) testing to determine if breeding populations of Great Crested Newts are present. eDNA testing can only be undertaken from mid-April to end-June and should be undertaken by a suitably licenced ecologist. Depending on the eDNA results, a mitigation licence may be required from NRW. Licences are no longer provided free of charge and will likely require population surveys to be undertaken.

4.2.3.7 Reptiles

The proposed works have the potential to result in small scale temporary loss of reptile during the construction phase with impacted habitats being reinstated when the works have been complete. Vegetation clearance should be conducted in a sensitive manner to avoid direct harm to reptiles.

Two-staged vegetation clearance should be conducted under a watching brief by an Ecological Clerk of Works (ECoW) between April and September to avoid the reptile hibernation period (which takes place October - March). The first cut should bring the vegetation down to between approximately 15cm. The second stage is to be undertaken later the same day (more than two hours) or the following day (weather and ground condition dependent - to allow reptiles and amphibians the chance to move away into adjacent areas) and will bring the vegetation down to ground level. All cleared vegetation will be moved to areas outside of the construction footprint to encourage reptiles to move away. Vegetation in working areas will be maintained short for the duration of the project to reduce the likelihood of disturbing reptiles. Small mammal burrows will be destructively searched under supervision of an ECoW to search for any reptiles using these as a refuge and move them away from working areas

4.2.3.8 Fish

The project is currently at the optioneering stage, and a method statement is not currently available, however, as the works are currently understood there will be no in-channel working and the sheet pile removal will be completed from the banks edge using an attachment to an excavator. The proposed works have the potential to cause disturbance to fish populations within the Afon Mawddach with Allis Shad being particularly sensitive to vibration of the water column. This can be effectively mitigated by carrying out the works outside of the main migratory and spawning period, October - late February (this can vary river to river and Natural Resources Wales (NRW) should be consulted). These measures should be included within the EAP and agreed in advance with the NRW Fisheries team.

If in-channel working is proposed, it is unlikely that works will require complete closure of the river. However, should this become necessary it is likely that in-river construction works may only be permitted between June and September (inclusive) before the fish spawning season starts.

4.2.3.9 Invasive Non-Native Species

No INNS were observed on the site at the time of the survey, however, signs of INNS species may have been overlooked during the survey due to the timing of the survey occurring in February time when many invasive plants are inconspicuous or have altogether died back. Records for Himalayan balsam, Japanese Knotweed and Rhododendron within close proximity to the site were returned in the desk study. The presence of workers and machinery on site could introduce species and therefore industry-standard biosecurity measures should be implemented on site. The Check-Clean-Dry approach should be followed, ensuring that all PPE and equipment is cleaned before leaving site.

4.2.4 General Avoidance Measures

General avoidance measures that should be incorporated within the scheme include:

- Limit the hours of working to daylight hours, to limit disturbance to nocturnal and crepuscular animals;
- Due to the likely presence of Bats and Otter the use of lighting at night should be avoided. If the use of lighting is essential, then a directional cowl should be fitted to all lights to prevent light spill and to be directed away from watercourses.
- Contractors must ensure that no harm comes to wildlife by maintaining the site efficiently and clearing away materials which are not in use, such as wire or bags in which animals can become entangled; and
- Any pipes should be capped when not in use (especially at night) to prevent animals becoming trapped. Any excavations should be covered overnight to prevent animals from falling and getting trapped. If that is not possible, a strategically placed plank should be placed to allow animals to escape.

4.2.5 Biosecurity

Measures will need to be put in place to ensure that there is no spread of invasive non-native species or diseases. The Check-Clean-Dry approach should be followed, ensuring that all PPE and equipment is cleaned before leaving site. For more information go to: www.nonnativespecies.org/checkcleandry.

4.2.6 Pollution Prevention Measures

Appropriate mitigation measures should be implemented prior to the construction phase to ensure that water quality is not adversely affected through pollution incidents and the release of contaminants from the site.

5 Summary of Recommendations

Given the results of the desk study and site walkover, further surveys are recommended to gain a better understanding of the study area baseline and to help further inform option development and detailed designs. These are outlined below:

- A Habitat Regulations Assessment will be required to determine the potential for likely significant effects on the designated nature conservation sites.
- Precautionary measures for vegetation clearance to safeguard nesting birds should be put in place. Where possible, vegetation clearance should be undertaken outside the main breeding season (i.e. between October and February). Any vegetation clearance being undertaken within the main breeding season should be conducted under a watching brief by an experienced Ecological Clerk of Works (ECoW). Any identified nests will be safeguarded until the chicks have fledged to ensure there are no direct impacts upon nesting birds.
- A Preliminary Roost Assessment will be required by a suitably qualified ecologist if trees are proposed for removal and if the assessment deems the trees to have Potential Roost Features further surveys will be required.
- Precautionary measures should be put in place for potential bat species foraging and commuting in the area, including limitations on night working.
- Vegetation clearance and works to scrub and woodland areas should be conducted under a watching brief by an Ecological Clerk of Works (ECoW) between April and September to avoid impacts to reptiles and amphibians. Further surveys are required including Environmental DNA (eDNA) testing to determine if breeding populations of Great Crested Newts are present.
- Precautionary measures should be put in place for potential Badger foraging and commuting in the area.
- If the proposed works are likely to impact any of the ditches within the site boundary Water Vole surveys should be carried out in order to confirm presence or likely absence of new Water Vole within the site area.
- An Otter check should be completed as close to the construction works starting as possible in order to identify any potential new holts or resting areas within the site area.
- Works should be completed outside of the main migratory and spawning period, October - late February (this can vary river to river and NRW should be consulted). These measures should be included within the EAP and agreed in advance with the NRW Fisheries team.

This PEA should be reviewed and updated where necessary once a method statement and detailed demolition sequence have been confirmed.

Appendix

A Relevant policy and legislation

The legislation discussed below is intended as a guide only and does not replace formal legal advice.

A.1 Planning Policy Wales (Edition 12, February 2024)

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. PPW, the TANs, MTANs and policy clarification letters comprise national planning policy.

The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation and resultant duties such as the Socio-economic Duty. A well-functioning planning system is fundamental for sustainable development and achieving sustainable places.

A.2 Natural Environment and Rural Communities (NERC) Act 2006

The Natural Environment and Rural Communities Act (NERC) requires all public authorities, including planning authorities to have regard to the purpose of conserving biodiversity whilst carrying out their normal functions. The NERC Act includes lists of Habitats and Species of Principal Importance (HPIs and SPIs) to the conservation of biodiversity (Section 42) which should be considered in the implementation of duties under the NERC Act. In line with government circular 06/2005 (ODPM, 2005) which provides supplementary guidance, the presence of a Priority species may be a material consideration when a planning authority is considering a development proposal. The HPI and SPI listed under the NERC Act are largely also UK BAP Priority habitats and species. The UK Post-2010 Biodiversity Framework succeeds the UK BAP partnership; though its list of Priority species and habitats agreed under the UK BAP still form the basis of much biodiversity work in the UK. Although the UK BAP has been succeeded, Species Action Plans (SAPs) developed under the UK BAP still remain important and valuable reference sources for background information on Priority species under the UK Post-2020 Biodiversity Framework.

A.3 Statutory Designated Nature Conservation Sites

Sites with statutory designations receive varying degrees of legal protection under UK statute and European Directives. There are several statutory designations used for sites of high nature conservation value in the UK, which are applied depending upon the importance of the site in a local, regional, national or international context. This includes:

- Ramsar Sites (International designation);
- SAC and SPA (European designations);

- National Nature Reserves (NNR) and SSSI (National designations);
- Local Nature Reserves (LNR) (Local designation).

A.4 Non-Statutory Designated Sites

Non-statutory sites are afforded no statutory legal protection but are normally recognised by local planning authorities and statutory agencies as being of local nature conservation value. The protection afforded to such sites is usually discretionary, through Local Plan policies. Non-statutory sites are designated by the local authority, usually in partnership with the County Wildlife Trust (or equivalent).

A.5 Protected Species

Several species are protected under UK and international legislation. In the UK, primary protection is provided under the Wildlife and Countryside Act 1981 (as amended). Species of European importance receive additional protection in Wales under the Conservation of Habitats and Species Regulations 2017 (as amended); others may receive protection through specific legislation. Further details on specific species and their levels of protection are provided below.

A.5.1 Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- Intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built;
- Take, destroy or possess the egg of any wild bird.

Certain species, such as the Barn Owl *Tyto alba*, receive additional protection under Schedule 1, which makes it an offence to intentionally or recklessly disturb birds and also their young at, on or near an active nest.

A.5.2 Badger

Badgers *Meles meles* are protected by the Protection of Badgers Act 1992 and the Wildlife and Countryside Act 1981 (as amended), Schedule 6. Under the Protection of Badgers Act, it is illegal to intentionally kill, capture, injure or ill-treat any Badger. It is also an offence to obstruct, destroy or damage a Badger sett or disturb Badgers within a sett. Disturbance is defined, for development purposes, as any activity that could damage a sett or be greater than what Badgers commonly tolerate.

A.5.3 Bats

All UK bat species are European Protected Species (EPS), protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitat and Species Regulations 2017 (as amended). This makes it an offence to:

- Deliberately capture, injure or kill a bat
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);
- Intentionally or recklessly obstruct access to a bat roost.

A.5.4 Otter

The European Otter *Lutra lutra* is an EPS protected under the Conservation of Habitats and Species Regulations 2017 (as amended), making it an offence to:

- Deliberately capture, injure or kill an Otter;
- Deliberately disturb an Otter such as to affect local populations or breeding success;
- Damage or destroy an Otter holt, possess or transport an Otter or any part of an Otter;
- Sell or exchange an Otter.

Otters also receive protection under the Wildlife and Countryside Act 1981 (as amended), this makes it an offence to:

- Intentionally or recklessly disturb any Otter whilst within a holt;
- Intentionally or recklessly obstruct access to a holt.

A.5.5 Water Vole

The Water Vole *Arvicola amphibius* is protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- Intentionally kill, injure or capture a Water Vole;
- Possess or control a Water Vole, living or dead, or any part of a Water Vole;
- Intentionally or recklessly damage, destroy or obstruct access to any place of shelter, or disturb a Water Vole within such a place;
- Sell or offer for sale a Water Vole living or dead, or part of a Water Vole.

A.5.6 Great Crested Newt

The Great Crested Newt *Triturus cristatus* is an EPS under the Conservation of Habitats and Species Regulations 2017 (as amended). This makes it an offence to:

- Kill, capture or disturb a Great Crested Newt;
- Take or destroy the eggs of a Great Crested Newt;
- Damage or destroy the breeding or resting places of Great Crested Newt.

It also receives additional protection under the Wildlife and Countryside Act 1981 (as amended) making it illegal to possess or control any Great Crested Newt, living or dead.

A.5.7 Reptiles and Other Amphibians

Legal protection varies considerably for different species. Smooth Snake *Coronella austriaca*, Sand Lizard *Lacerta agilis* and Natterjack Toad *Epidalea calamita* are EPS, and it is an offence to:

- Deliberately kill, capture or disturb these species;
- Deliberately take or destroy the eggs of these species;
- Damage or destroy the breeding or resting places of these species.

Under the Wildlife and Countryside Act 1981 (as amended) Adder *Vipera berus*, Grass Snake *Natrix natrix*, Common Lizard *Zootoca vivipara* and Slow Worm *Anguis fragilis* are protected from intentional killing or injuring, additionally Common Frog *Rana temporaria*, Common Toad *Bufo bufo* and other newt species are prohibited from sale.

A.5.8 Fish

The Salmon and Freshwater Fisheries Act (1975) affords protection to fish and to the spawning grounds of fish. Section 2(5) makes it an offence to wilfully disturb spawning fish or the spawn of fish. Section 4(1) makes it an offence to knowingly permit the introduction of material to a watercourse such that it becomes injurious to fish, the spawn of fish or the spawning grounds of fish.

A.5.9 Invertebrates

Numerous invertebrate species receive international protection under the following legislation:

- The Conservation of Habitats and Species Regulations 2017 (as amended); Annex IIa, Annex Iva and Annex Va;
- Council of Europe Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II and III;
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- EU CITES Regulations.

Approximately 70 species of invertebrate species receive legal protection through Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). There are various levels of protection according to the rarity of the species. Offences include combinations of the following:

- Sale, or offering / exposing for sale;
- Possession;
- Intentional taking, killing or injuring;
- Intentionally / recklessly damaging or destroying its place of shelter / protection;
- Intentionally / recklessly disturbing it whilst occupying its place of shelter / protection;

- Intentionally / recklessly obstructing access to its place of shelter / protection Species with full protection under the Act include the Marsh Fritillary *Euphydryas aurinia*, Southern Damselfly *Coenagrion mercuriale* and Violet Click Beetle *Limoniscus violaceus*.

There are also over 400 invertebrate species listed under Section 41 of the Natural Environment and Rural Communities Act for England and under Section 7 of the Environment (Wales) Act 2016.

A.5.10 Invasive Non-Native Species

Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) lists plant species, groups of plants and animal species for which it is illegal to plant, release, allow to escape or cause to spread into the wild. Examples of species listed on Schedule 9, which are most likely to be encountered, include Japanese Knotweed *Fallopia japonica*, Himalayan Balsam *Impatiens glandulifera*, Giant Hogweed *Heracleum mantegazzanum* and Signal Crayfish *Pacifastacus leniusculus*. Some species are also classed as 'controlled waste' under the Environmental Protection Act 1990 and must be disposed of properly (i.e. Japanese Knotweed and Giant Hogweed). These provisions mean that, if these species occur on a site proposed for development or other work which may disturb the ground, control of these species is likely to be required.

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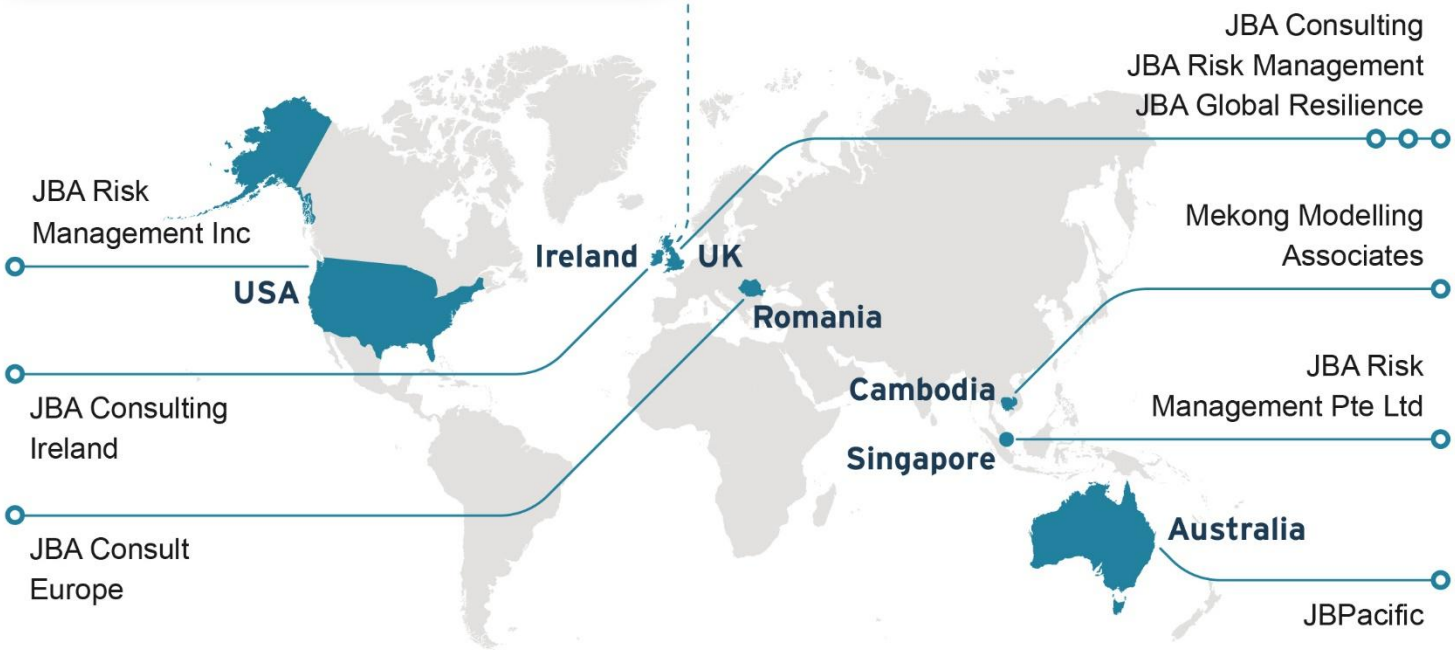

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