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Preliminary Ecological Appraisal

Proposed cable route for:

Land to the east of the A48 and Land to the south west of Tycroes

April 2020

(To be read in conjunction with the Preliminary Ecological Appraisal for the proposed solar farm (Report no: WOR-775.3))

A report by

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Report details

Site name:	Proposed cable route: Land to the east of the A48 and Land to the south west of Tycroes
Grid reference:	Eastern end: SN 600 101 Western end: SN 576 091
Survey dates:	13th May & 17th November 2019
Report date:	29th April 2020
Report author:	Colin Hicks BSc (Hons) MCIEEM
Report no:	WOR-1184.4

Declaration of compliance

BS 42020:2013

This study has been undertaken in accordance with British Standard 42020:2013 Biodiversity, Code of practice for planning and development.

Code of Professional Conduct

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Validity of survey data and report

The findings of this report are valid for 24 months from the date of survey. If work has not commenced within this period, an updated survey by a suitably qualified ecologist will be required.

Revisions

Date	Report no:	Approved by:	Comment
03/11/2019	WOR-1184.1	CDH	Original report
23/11/2019	WOR-1184.2	CDH	Updated following NRW comments in relation to HDD and Otter, and roosting bats associated with areas adjacent to River Gwili
12/03/2020	WOR-1184.3	CDH	Updated following additional NRW and CCC comments with western end of cable route extended
28/04/2020	WOR-1184.4	CDH	Final version

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Non-technical summary

Western Ecology has been commissioned to complete a Preliminary Ecological Appraisal for a proposed cable route for a solar farm at Land to the east of the A48 and Land to the south west of Tycroes. A buried electrical cable is proposed connecting areas of the proposed solar farm to an electrical substation. It will be laid within a trench approximately 600mm wide before the trench is backfilled. This report should be read in conjunction with the Preliminary Ecological Appraisal for the proposed solar farm (Report no: WOR-775.3)

Habitats comprise agricultural grasslands, road verges, woodland, marshy grassland, hardstanding and hedgerows. The River Gwili is in the west of the cable route.

To ensure compliance with nature conservation legislation and planning policy, the following recommendation is made with regards to **habitats**:

Intact hedge, species rich

Hedgerows would qualify as a Local Biodiversity Action Plan Priority Habitat and a Habitat of Principal Importance. The cable trench will be dug under hedgerows and supporting hedgebanks. This will require hand-digging to avoid the roots of large shrubs and trees.

Marshy grassland

Marshy grassland in Field F8 has potential to support marsh fritillary. A working method statement is provided for works in this area.

To ensure compliance with nature conservation legislation and planning policy, the following recommendation is made with regards to **species**:

Badgers

There is potential that Badgers may become trapped within the Site during the construction. To prevent this, the following is recommended:

- If site security fencing is required, an appropriate gap should be left between the fence and hedgebank/hedgerow.
- Any deep trenches left open at night (>1m deep) should have some means of escape for Badgers, such as the placement of a scaffolding board at one end.

Construction may affect the three occasional use Badger sett entrance in the hedgebank between Fields F2 and F3, or animal within it, in a way that could be considered an offence. Avoidance mitigation is recommended.

Dormice

Hedgerows have the potential to support small numbers of Dormice. To ensure no adverse effect on these animals, the cable route will be dug under hedgerows and supporting hedgebanks. This may require hand-digging to avoid the roots of large shrubs and trees.

Nesting birds

Marshy grassland in F8 will be subject to trenching in the bird nesting season to minimise impacts associated with damp ground. Prior to the start of works this habitat should be thoroughly inspected by a suitably qualified person prior to disturbance. If nesting birds are found, all activities likely to damage the immediate area should be delayed until chicks have fledged.

Otter

Mitigation in relation to HDD to avoid adverse impacts on Otter associated with the River Gwili is recommended.

Reptiles

Marshy grassland in Field F8 has potential for widespread and common reptiles. Reasonable avoidance measures are recommended.

Marsh fritillary

Marshy grassland in Field F8 has potential to support marsh fritillary. A working method statement is provided for works in this area.

To ensure compliance with nature conservation legislation and planning policy, the following recommendations are made with regards to **Statutory Nature Conservation Sites:**

Caeau Mynydd Mawr SAC

A working method statement in relation to marsh fritillary and marshy grassland is provided for works in Field F8. In combination with horizontal direct drilling under Field F13 and Woodland W1/W2, this will ensure the proposed cable route will have no significant effect on Caeau Mynydd Mawr SAC.

Further survey work

Badgers - Should permission to develop be successful, a further Badger survey should be completed as near as practicable to the start of site development. This will ensure the assessment and resultant mitigation to be adopted during construction will be based on the most recent distribution of sett entrances likely to be affected.

Breeding bird survey – Marshy grassland in F8 will be subject to trenching during the bird active season to minimise impacts associated with wet ground. Prior to the start of works, grassland should be thoroughly inspected by a suitably qualified person for nesting birds prior to disturbance or removal. If nesting birds are found, all activities likely to damage the immediate area should be delayed until chicks have fledged.

1. Introduction

1.1. Background

1.1.1. Western Ecology has been commissioned to complete a Preliminary Ecological Appraisal for a proposed cable route for a solar farm at Land to the east of the A48 and Land to the south west of Tycroes.

1.2. Proposed development

1.2.1. A buried electrical cable is proposed connecting areas of the proposed solar farm to an electrical substation. It will be laid within a trench approximately 600mm wide before the trench is backfilled.

1.2.2. Woodland, a river crossing and an area of marshy grassland in the west of the site will be traversed by sub-soil horizontal directional drilling (HDD).

1.3. Survey aims

1.3.1. The survey and this report identify features of conservation importance that could constitute a constraint to the proposals for this site. Where appropriate, recommendations for impact avoidance, mitigation and post-development enhancement are made to ensure compliance with wildlife legislation and relevant planning policy.

1.3.2. This survey has been prepared in accordance with the 'Guidelines for Preliminary Ecological Appraisal' produced by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017).

1.4. Site location

1.4.1. The site comprises land to the west of Tycroes, a village in Carmarthenshire.

2. Survey methodology

2.1. Desktop survey

2.1.1. The desktop survey collated existing biological records for the site and adjacent areas and identified any nature conservation sites that may be affected by the proposals. This comprises an important part of the assessment process, providing information on ecological issues that may not be apparent during the site survey.

2.1.2. Consultees for the data search included:

- West Wales Biodiversity Records Centre - records of protected/notable species and non-statutory nature conservation sites within 4km of the site.
- Natural Resources Wales datasets – Location of statutory nature conservation sites within 4km.

2.1.3. Species data was examined for protected and notable species records. An assessment was then made, based on known habitat preferences, as to whether these species might be present within the site and how they might be affected by the proposal.

2.1.4. The location of nature conservation sites was examined to determine their ecological and landscape relationships with the proposed site. An assessment was then made of how the sites may be affected by the proposal, taking into account these relationships, and the species and/or habitat types for which the nature conservation site was chosen.

2.1.5. SSSI Impact Risk Zones are areas where the proposed planned change to the environment could either create significant damage to a local SSSI, or might require additional planning and consultation in order to avoid impacting such sites. The assessments are made according to the particular sensitivities of the features for which the SSSI is notified, and specifies the types of development that have the potential for adverse impacts.

2.1.6. In compliance with the terms and conditions relating to its commercial use, the full desk study data is not provided within this report.

2.2. Field survey

2.2.1. A Preliminary Ecological Appraisal of the site was completed by Colin Hicks BSc (Hons.) MCIEEM.

2.2.2. The survey was completed on 13th May 2019 and 17th November 2019 during suitable weather conditions.

2.2.3. Habitats were classified using the Phase 1 Habitat Survey methodology developed by the Joint Nature Conservation Committee (JNCC, 2010) and modified by the Institute of Environmental Assessment (IEA, 1995). The main plant species were recorded, and broad habitat types mapped. Habitats encountered are described

within the Results section, with a map included within the report. Plant species were identified according to Stace (1997).

2.3. Method for valuation of habitats

2.3.1. The ecological value of habitats present is provided in line with Guidelines for Ecological Impact Assessment (CIEEM, 2016), and those which are important in terms of legislation or policy are identified.

2.3.2. The nature conservation value, or potential value, of the habitat is determined within the following geographic context:

- International importance (e.g. internationally designated sites such as Special Areas of Conservation, Special Protection Areas, Ramsar sites);
- National importance (e.g. nationally designated sites such as Sites of Special
  Scientific Interest or species populations of importance in the UK context);
- County importance (e.g. SNCI, habitats and species populations of importance in the context of Carmarthenshire);
- Local importance (e.g. important ecological features such as old hedges, woodlands, ponds);
- Site importance (e.g. habitat mosaic of grassland and scrub which may support a diversity of common wildlife species);
- Negligible importance. Usually applied to areas such as built development or areas of intensive agricultural land.

The examples are not exclusive and are subject to further professional ecological judgment.

2.4. Survey constraints

2.4.1. All areas of the site were readily accessible. Although some plant species would have not been visible during the survey period, within such a small, simple site comprising common and widespread habitat types, the timing of this survey is not a significant constraint to a robust initial site assessment.

2.4.2. It should be noted that habitats, and the species they may support, change over time due to natural processes and because of human influence. In line with current guidelines, the survey on which this report is based is only valid for two years, after which time it will need updating. This report is valid until 17th November 2021.

2.5. Study area

2.5.1. The study area of the biological records search is within a 1km radius of the site centre for notable species, local nature conservation sites, and 4km for bats and birds. The study area for statutory nature conservation sites was 4km. The study area for the Preliminary Ecological Appraisal was the footprint of the development, hereafter referred to as the ‘Site’, and its immediate boundaries. This is the area included within the line described as “Survey area” within the legend of Map 1a & Map 1b.

3. Results

3.1. Background

3.1.1. Habitats have been classified using the Phase 1 Habitat Survey methodology and are described below. Habitats which are important in terms of legislation or policy are identified. Plant species that characterise each of these habitats are identified, although this is for descriptive purpose, and a comprehensive inventory is not provided.

3.1.2. All images were made on 17th November 2019 unless otherwise stated.

Improved grassland (F1, F2, F3, F4, F5, F6, F7, F9, F10 & F14)

3.1.3. Areas in the west of the Site included grassland that has been improved to provide fodder and forage for livestock (Image 1) dominated by Perennial Rye-grass *Lolium perenne* with Yorkshire Fog *Holcus lanatus*, Cocks' Foot *Dactylis glomerata*, Meadow-grass *Poa* sp, and occasional Sweet Vernal Grass *Anthoxanthum odoratum* and Timothy *Phleum pratense*. Associated herbs included White Clover *Trifolium repens*, Creeping Buttercup *Ranunculus repens* and Dandelion *Taraxacum officinale* agg.

3.1.4. This managed habitat is of negligible value for biodiversity.

Image 1. Improved grassland

Species poor-semi-improved grassland (F1, F2 & F11)

3.1.5. Grassland close to the sub-station in the west comprises species poor grassland with Yorkshire Fog, Creeping Bent *Agrostis capillaris*, Perennial Rye-grass and Soft Rush *Juncus effusus*. Herbs include Ribwort Plantation *Plantago lanceolata*, Broad-leaved Dock *Rumex obtusifolius* and fescue *Festuca* sp (Image 2).

3.1.6. This managed habitat is of negligible value for biodiversity.

Image 2. Species poor semi-improved grassland

Semi-improved neutral grassland

3.1.7. Grassland within the northern verge of the A483 and a narrow track to its north supported a more diverse community of grasses and herbs due to occasional mowing with Cock's-Foot, Yorkshire Fog, Annual Meadow-grass *Poa annua*, Dandelion, White Clover, Red Clover *Trifolium pratense*, Ribwort Plantation, Creeping Buttercup, Common Nettle, Broad-leaved Dock and vetch *Vinca* sp (Image 3 and Image 4).

3.1.8. This managed habitat is of site value for biodiversity.

Image 3. Semi-improved grassland along A483

Image 4. Semi-improved grassland along track to north of A483

Marshy grassland (F8 and F13)

3.1.9. Marshy grassland was present within two enclosures with frequent Purple Moor-grass *Molina caerulea* amongst Soft Rush, Yorkshire Fog, Angelica *Angelica sylvestris*, Tormentil *Potentilla erecta*, Brooklime *Veronica beccabunga*, Marsh Thistle *Cirsium palustre* and Meadow-sweet *Filipendula ulmaria* (Image 5). F13 was very damp at the time of survey in winter 2019, although F8 was much drier when surveyed in May 2019.

3.1.10. This habitat would qualify as Fen, Marsh and Swamp, a habitat listed under Section 7 of the Environment (Wales) Act 2016 and is a Local Biodiversity Action Plan priority habitat.

3.1.11. This habitat is of local value for biodiversity.

Image 5. Marshy grassland (F13)

Semi-natural broadleaved woodland (W1, W2 & W3)

3.1.12. In places, external boundaries to the site comprise semi-natural broadleaved woodland with Sycamore *Acer pseudoplatanus*, Birch *Betula* sp., Common Ash *Fraxinus excelsior*, native Oak *Quercus* sp., and willow *Salix* sp. An understorey of Hazel *Corylus avellana* and Hawthorn *Crateagus monogyna* are present with Holly *Ilex aquifolium*, Bramble *Rubus fruticosus* agg. and Ivy *Hedera helix*.

3.1.13. A short section of the cable route includes an area of woodland to the immediate east of the River Gwili (W2). This comprise Pedunculate Oak *Quercus robur*, with Holly, Hazel, and Hawthorn. Ground flora was sparse but included Ivy and the ferns Broad Buckler-fern *Dryopteris dilatata* and Hard Fern *Blechnum spicant* (Image 6). More open areas in the east of this woodland have patchy Purple Moor-grass (W1).

3.1.14. This habitat is of local value for biodiversity.

Image 6. Semi-natural broadleaved woodland

3.1.15. This habitat would qualify as Lowland Mixed Woodland, a habitat listed under Section 7 of the Environment (Wales) Act 2016 and is a Local Biodiversity Action Plan priority habitat.

3.1.16. This habitat is of local value for biodiversity.

Continuous Bracken (F12)

3.1.17. Areas of Bracken *Pteridium aquilinum* are present within Field F12 in the west of the cable route. This is a common habitat of site value for biodiversity.

Hardstanding/bare ground

3.1.18. The cable route will pass along the edge of an existing unvegetated access track in the west of the site. This is a common habitat of negligible value for biodiversity.

Intact hedge, species rich

3.1.19. Boundaries comprise species rich hedgerows with diverse native woody shrubs and trees including Hazel, Hawthorn, Holly, European Gorse *Ulex europaeus*, Blackthorn *Prunus spinosa*, willow *Salix* sp,. Pedunculate Oak and Rowan *Sorbus aucuparia*. Associated with these woody shrubs are Bracken, Honeysuckle *Lonicera periclymenum*, Dog Rose *Rosa canina* agg., Bramble., Ivy, Cleaver *Galium aparine* and Foxglove *Digitalis purpurea*. These hedgerows have been variously managed, some being tall and leggy, and some low and compact. The majority of hedgerows were associated with a low hedgebank.

3.1.20. Hedgerows are listed under Section 7 of the Environment (Wales) Act 2016 and are a Local Biodiversity Action Plan priority habitat. Some hedgerows would qualify as ecologically important for the purposes of the Hedgerow Regulations 1997.

3.1.21. This habitat is of Site value for biodiversity and provides nesting habitat for widespread and common birds.

Running water

3.1.22. The River Gwili flows along the western most boundary of the site (Image 7). The banks of the river are vegetated with willow, Oak, Sycamore, Alder and Hazel. A small area of Japanese Knotweed *Reynoutria japonica* was present on the riverbank.

3.1.23. This habitat is listed under Section 7 of the Environment (Wales) Act 2016 and is a Local Biodiversity Action Plan priority habitat.

3.1.24. This habitat is of local value for biodiversity and is likely to support occasional Otter.

Image 7. River Gwili

3.2. Desktop survey

3.2.1. The biological records search found a number of notable species.

Amphibians

3.2.2. There are 12 records for Common Frog, three for Common Toad and one for Palmate Newt within 4km.

Badgers

3.2.3. There are 22 records for Badger within 4 km of the Site.

Bats

3.2.4. There are 71 records for bats within 4km of the Site. The species recorded are detailed in Table 2. The nearest record for a known bat roost is 1.4km and describes a Lesser Horseshoe roost in 1986.

Table 2. Bat records within 4km

Common name	Number of records
Bat	7
Brown Long-eared	8
Common Pipistrelle	17
Daubenton's	2
Greater Horseshoe	1
Myotis sp.	3
Noctule	4
Nyctalus sp.	1
Pipistrelle sp.	16
Serotine	1
Soprano Pipistrelle	11

Birds

3.2.5. There are 332 bird records within 4km and these are detailed in Table 3.

Table 3. Bird records within 4km

Common name	Conservation status	Count
Blackbird	BDir22, S7, WBR[RSPB], UKBAm[RSPB]	16
Black-headed Gull	Bern	1
Blue Tit	WCA1.1	37
Brambling	S7, WBR[RSPB], LBAP[CE,PE], UKBAm[RSPB]	1
Bullfinch	Bern, WBAm[RSPB]	12
Coal Tit	Bern, LBAP [GWY], UKBAm[RSPB]	11
Common (Mealy) Redpoll	WBAm[RSPB]	2
Cormorant	S7, WBR[RSPB], UKBR[RSPB]	2
Cuckoo	Bern, WBAm[RSPB], UKBAm[RSPB]	2
Dipper	S7, Bern, UKBAm[RSPB]	1
Dunnock	BDir22, WCA1.1, WBAm[RSPB], UKBR[RSPB]	11
Fieldfare	WBAm[RSPB]	2
Garden Warbler	Bern, WBAm[RSPB]	2
Goldcrest	Bern	6
Goldfinch	BDir22	7
Goosander	S7, WBR[RSPB], UKBR[RSPB]	3
Grasshopper Warbler	Bern	4
Great Spotted Woodpecker	Bern	6
Great Tit	WCA1.1, Bern, UKBAm[RSPB]	18
Green Sandpiper	Bern, LBAP[PE], WBAm[RSPB]	3
Green Woodpecker	Bern	5
Greenfinch	Bern, UKBR[RSPB]	1
Grey Wagtail	BDir22, S7, WBR[RSPB], UKBR[RSPB]	2
Herring Gull	Bern, WBAm[RSPB], UKBAm[RSPB]	4
House Martin	S7, WBAm[RSPB], UKBR[RSPB]	2
House Sparrow	BDir22, S7, WBR[RSPB], LBAP[PE], UKBR[RSPB]	12
Lapwing	BDir22, LBAP[PE], WBAm[RSPB], UKBAm[RSPB]	16
Lesser Black-backed Gull	S7, WBR[RSPB], LBAP [DEN, POW, VOG], UKBR[RSPB]	2
Lesser Redpoll	S7, Bern, WBR[RSPB], LBAP[CE,PE], LBAP [CON, GWY], UKBR[RSPB]	1
Linnet	WCA1.1, Bern	2
Little Ringed Plover	WBAm[RSPB]	3
Long-tailed Tit	BDir21, WBAm[RSPB], UKBAm[RSPB]	5
Mallard	Bern, WBAm[RSPB], UKBAm[RSPB]	4
Meadow Pipit	BDir22, Bern, UKBR[RSPB]	4
Mistle Thrush	BDir1, S7, Bern, LBAP[CE,PE], WBAm[RSPB], UKBAm[RSPB]	5
Nightjar	Bern	1
Nuthatch	BDir22, WBAm[RSPB], UKBAm[RSPB]	16
Oystercatcher	Bern	1
Pied Wagtail	BDir22, WCA1.1, WBAm[RSPB], UKBR[RSPB]	7
Redwing	S7, Bern, LBAP[CE,PE], WBAm[RSPB], UKBAm[RSPB]	5
Reed Bunting	Bern, WBAm[RSPB]	7
Sand Martin	BDir22, S7, LBAP[CE,PE], WBAm[RSPB], UKBR[RSPB]	4
Skylark	BDir21, WBAm[RSPB], UKBAm[RSPB]	4
Snipe	BDir22, S7, Bern, LBAP[CE,PE], WBAm[RSPB], UKBR[RSPB]	4
Song Thrush	S7, Bern, WBR[RSPB], LBAP[CE,PE], UKBR[RSPB]	12
Spotted Flycatcher	BDir22, S7, Bern, WBR[RSPB], UKBR[RSPB]	1
Starling	Bern, LBAP[PE], LBAP [CON, GWY]	5
Stonechat	Bern, WBAm[RSPB]	6
Swallow	WBAm[RSPB], UKBAm[RSPB]	10
Swift	BDir21, CITES, WBAm[RSPB], UKBAm[RSPB]	1
Teal	S7, Bern, WBAm[RSPB], UKBR[RSPB]	3
Tree Pipit	S7, WBR[RSPB], LBAP[CE,PE], UKBR[RSPB]	2
Tree Sparrow	Bern	2
Treecreeper	BDir22, S7, CITES, WBR[RSPB], UKBR[RSPB]	4
Turtle Dove	Bern, WBAm[RSPB]	1
Wheatear	WBAm[RSPB]	3
Whitethroat	S7, Bern, WBR[RSPB], LBAP [CON, GWY], UKBR[RSPB]	4
Willow Tit	WBR[RSPB], UKBAm[RSPB]	4
Willow Warbler	BDir21, WBAm[RSPB], UKBR[RSPB]	3

Woodcock		7

Key to Conservation status

BDir1 = EC Birds Directive Annex 1 Species
BDir21 = EC Birds Directive Annex 2.1 Species
BDir22 = EC Birds Directive Annex 2.2 Species
Bern = The Bern Convention on the Conservation of European Wildlife and Natural Habitats
Bonn = The Bonn Convention on the Conservation of Migratory Species of Wild Animals Species
CITES = Convention on International Trade in Endangered Species
EPS = European Protected Species
HDir = EU Habitats Directive Species
LBAP (xxx) = Local Biodiversity Action Plan Species (see key below)
LI (BIS) = Locally Important Species (as identified by local specialists) in BIS* area.
LI (SEWBReC) = Locally Important Species (as identified by local specialists) in SEWBReC area.
LI (VC##) = Locally Important Species (as identified by local specialists) in Vice County ##
LI (VC##, EX) = Extinct in Vice County ##
LI (VC##, LR) = Locally Rare in Vice County ##
LI (VC##, LS) = Locally Scarce in Vice County ##
LI (VC##, UR) = Under Recorded in Vice County ##
NRW = Natural Resources Wales Priority Species
RD1 (UK) = UK Red Data Book listing based on IUCN guidelines
RD1 (Wales) = Welsh Red Data Book listing based on IUCN guidelines
RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce)
S42 = Natural Environment and Rural Communities Act 2006 (Section 42)
S7 = Environment Act (Wales) Section 7 Species
UKBAm (RSPB) = RSPB UK Amber listed birds (not based on IUCN criteria)
UKBAP (R) = UK Biodiversity Action Plan Priority Species (Research only species)
UKBAP = UK Biodiversity Action Plan Priority Species
UKBR (RSPB) = RSPB UK Red listed birds (not based on IUCN criteria)
WBAm (RSPB) = RSPB Welsh Amber listed birds (not based on IUCN criteria)
WBR (RSPB) = RSPB Welsh Red listed birds (not based on IUCN criteria)
WCA1.1 = Wildlife and Countryside Act Schedule 1 Part 1 Species
WCA5 = Wildlife and Countryside Act Schedule 5 Species
WCA8 = Wildlife and Countryside Act Schedule 8 Species
WCA9 = Wildlife and Countryside Act Schedule 9 Species
WSG.C = Guidelines for the Selection of Wildlife Sites in South Wales - Contributory species
WSG.P = Guidelines for the Selection of Wildlife Sites in South Wales - Primary species

Common Dormouse

3.2.6. The biological record search returned 166 records for Dormouse within 4km of the Site.

Otter

3.2.7. The biological record search returned 16 records for Otter within 4km of the Site and includes records for the River Gwili.

Water Vole

3.2.8. The biological record search returned 1 record for Water Vole within 4km of the Site.

Reptiles

3.2.9. The biological record search returned 6 records for Slow Worm, 5 records for Grass Snake, 3 record for Adder and 17 records for Common Lizard within 4km of the Site.

Invertebrates

3.2.10. The biological record search returned records for a number of notable invertebrates within 4km including a large number of records for Marsh Fritillary and a range of other Environment Act (Wales) Section 7 Species. These are listed in Table 4.

Table 4. Notable invertebrate records within 4km

Latin name	Common Name	Conservation status	Count
Acronicta psi	Grey Dagger	S7	1
Acronicta rumicis	Knot Grass	S7	9
Adscita statices	Forester	S7	3
Agrochola helvola	Flounced Chestnut	S7	1
Allophyes oxyacanthae	Green-brindled Crescent	S7	1
Apamea remissa	Dusky Brocade	S7	5
Arctia caja	Garden Tiger	S7	6
Atethmia centrago	Centre-barred Sallow	S7	1
Boloria selene	Small Pearl-bordered Fritillary	S7, RDB1 [UK] - NT	4
Brachylomia viminalis	Minor Shoulder-knot	S7	6
Caradrina morpheus	Mottled Rustic	S7	2
Ceramica pisi	Broom Moth	S7	12
Chiasmia clathrata	Latticed Heath	S7	6
Chiasmia clathrata clathrata	Latticed Heath	S7	1
Cirrhia icteritia	Sallow	S7	3
Coenonympha pamphilus	Small Heath	S7, RDB1 [UK] - NT	14
Conops vesicularis	Conops vesicularis	RDB2 [UK] - N	2
Cupido minimus	Small Blue	WCA5, S7, RDB1 [UK] - NT, LBAP[PE]	2
Diarsia rubi	Small Square-spot	S7	9
Ecliptopera silaceata	Small Phoenix	S7	14
Ennomos erosaria	September Thorn	S7	3
Ennomos fuscantaria	Dusky Thorn	S7	1
Erynnis tages	Dingy Skipper	S7, RDB1 [UK] - VU	7
Eudonia delunella	Pied Grey	RDB2 [UK] - NB	2
Euphydryas aurinia	Marsh Fritillary	HDir2, WCA5, S7, Bern, RDB1 [UK] - VU, LBAP[CE,PE]	416
Hemaris tityus	Narrow-bordered Bee Hawk-moth	S7, LBAP[CE]	1
Hepialus humuli	Ghost Moth	S7	1
Hipparchia semele	Grayling	S7, RDB1 [UK] - VU	2
Hoplodrina blanda	Rustic	S7	4
Hydraecia micacea	Rosy Rustic	S7	4
Hydrelia sylvata	Waved Carpet	LBAP[CE]	1
Lasiommata megera	Wall	S7, RDB1 [UK] - NT	2
Leucania comma	Shoulder-striped Wainscot	S7	4
Lycia hirtaria	Brindled Beauty	S7	3
Macaria wauaria	V-moth	S7	1
Malacosoma neustria	Lackey	S7	2
Melanchra persicariae	Dot Moth	S7	7
Microplontus campestris	Microplontus campestris	RDB2 [UK] - NB	1
Mythimna turca	Double Line	LBAP[CE]	3
Orthonama vittata	Oblique Carpet	S7	3
Orthosia gracilis	Powdered Quaker	S7	5
Scotopteryx chenopodiata	Shaded Broad-bar	S7	2
Spilosoma lubricipeda	White Ermine	S7	18
Spilosoma lutea	Buff Ermine	S7	12
Timandra comae	Blood-Vein	S7	11
Tyria jacobaeae	Cinnabar	S7	18
Watsonalla binaria	Oak Hook-tip	S7	4
Xanthorhoe ferrugata	Dark-barred Twin-spot Carpet	S7	5
Xestia agathina	Heath Rustic	S7	2
Xestia agathina agathina	Heath Rustic	S7	1
Xestia castanea	Neglected Rustic	S7	2

Plants

3.2.11. The biological record search returned records for a number of notable plants. These are listed in Table 5.

Table 5. Notable plant records within 4km

Latin name	Common name	Conservation status	Count
Althaea officinalis	Marsh-mallow	RDB2 [UK] - S	1
Buxus sempervirens	Box	RDB1 [UK] - DD, RDB2 [UK] - R	2
Cyperus longus	Galingale	RDB1 [UK] - NT, RDB2 [UK] - S	1
Euphorbia exigua	Dwarf Spurge	RDB1 [Wales] - NT, RDB1 [UK] - NT	1
Euphrasia officinalis subsp. pratensis	Eyebright	S7	5
Euphrasia rostkoviana subsp. rostkoviana	Eyebright	RDB1 [UK] - VU	1
Genista anglica	Petty Whin	RDB1 [UK] - NT	3
Gentiana pneumonanthe	Marsh Gentian	RDB1 [Wales] - VU, RDB2 [UK] - S	1
Gymnadenia borealis	Heath Fragrant-orchid	S7, RDB1 [Wales] - DD	2
Gymnadenia conopsea	Fragrant Orchid	S7	7
Hippuris vulgaris	Mare's-tail	RDB1 [Wales] - NT	1
Hyacinthoides non-scripta	Bluebell	WCA8	44
Lamiastrum galeobdolon subsp. montanum	Yellow Archangel	WCA9	1
Lepidium latifolium	Dittander	RDB2 [UK] - S	1
Meconopsis cambrica	Welsh Poppy	RDB2 [UK] - S	1
Menyanthes trifoliata	Bogbean	CITES	4
Ophrys apifera	Bee Orchid	CITES	6
Rorippa islandica	Northern Yellow-cress	RDB2 [UK] - S	3
Senecio paludosus	Fen Ragwort	WCA8, RDB1 [UK] - CR, RDB2 [UK] - R	1
Spergula arvensis	Corn Spurrey	RDB1 [Wales] - NT, RDB1 [UK] - VU	2
Tephroseris palustris	Marsh Fleawort	RDB1 [UK] - EX	1
Wahlenbergia hederacea	Ivy-leaved Bellflower	RDB1 [UK] - NT	1

Statutory Nature Conservation Sites

3.2.12. There are 10 Sites of Special Scientific Interest (SSSI) within 4km of the proposed development. These are detailed in Table 6, along with a summary of their interest features and distance (nearest point) from Site. These sites are of National importance.

Table 6. Sites of Special Scientific Interest within 4km

SSSI name	Summary of interest features	Distance
Broad Oak and Thornhill Meadows	Unimproved grasslands containing an abundance of the umbelliferous plants	1.9km to north east
Cae Gwynfryn	Unimproved grasslands	1.3km to north east
Caeau Afon Gwili	Grassland with colony of Marsh Fritillary	Multiple units, nearest of which is adjacent to the western end of the site
Caeau Blaenau-Mawr	Unimproved species-rich damp grassland. Marsh fritillary and marbled white butterflies have been recorded at the site	2.3km to north
Caeau Capel Hendre	Unimproved grassland. The site supports a colony of the marbled white butterfly	1.9km to north
Caeau Ffos Fach	Unimproved species-rich grassland with large colony of Marsh Fritillary	2.1km to north
Caeau Lotwen	Unimproved grasslands	1.3km to north
Felin Fach Meadows, Cwmgwili	Unimproved grasslands with marbled white butterflies	Multiple units, nearest of which is 130m away
Graig Fawr, Pontardulais	Dry acidic grassland of upland areas	2.1km to south east
Gweunydd Glan-Y-Glasnant	Unimproved grasslands	2.5km to north west

3.2.13. Broad Oak and Thornhill Meadows SSSI, Caeau Ffos Fach SSSI and Caeau Lotwen SSSI are component sites of Caeau Mynydd Mawr Special Area of Conservation (SAC). This site has been selected for:

Annex II species that are a primary reason for selection of this site:

Marsh fritillaries *Euphydryas aurinia* occur over a wide area of traditionally-managed purple moor-grass *Molinia caerulea* pastures in south-east Carmarthenshire. The extent of suitable habitat, contained within more than 30 enclosures at Caeau Mynydd Mawr, suggests that this is one of the largest metapopulations in Wales.

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)

3.2.14. This site is of International importance.

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Cable route will pass along existing farm track

Japanese Knotweed

Semi-improved grassland with occasional small native shrubs along track edge

Semi-improved grassland along road margin

Ynys-Wen

Llwyn-Ceubren

Cefn-Gwili

Range

Track

Collects

Drain

Sprs

138m

W1 W2 W3 F11 F12 F13 F14

A485

0 50 100 150 200 m

N

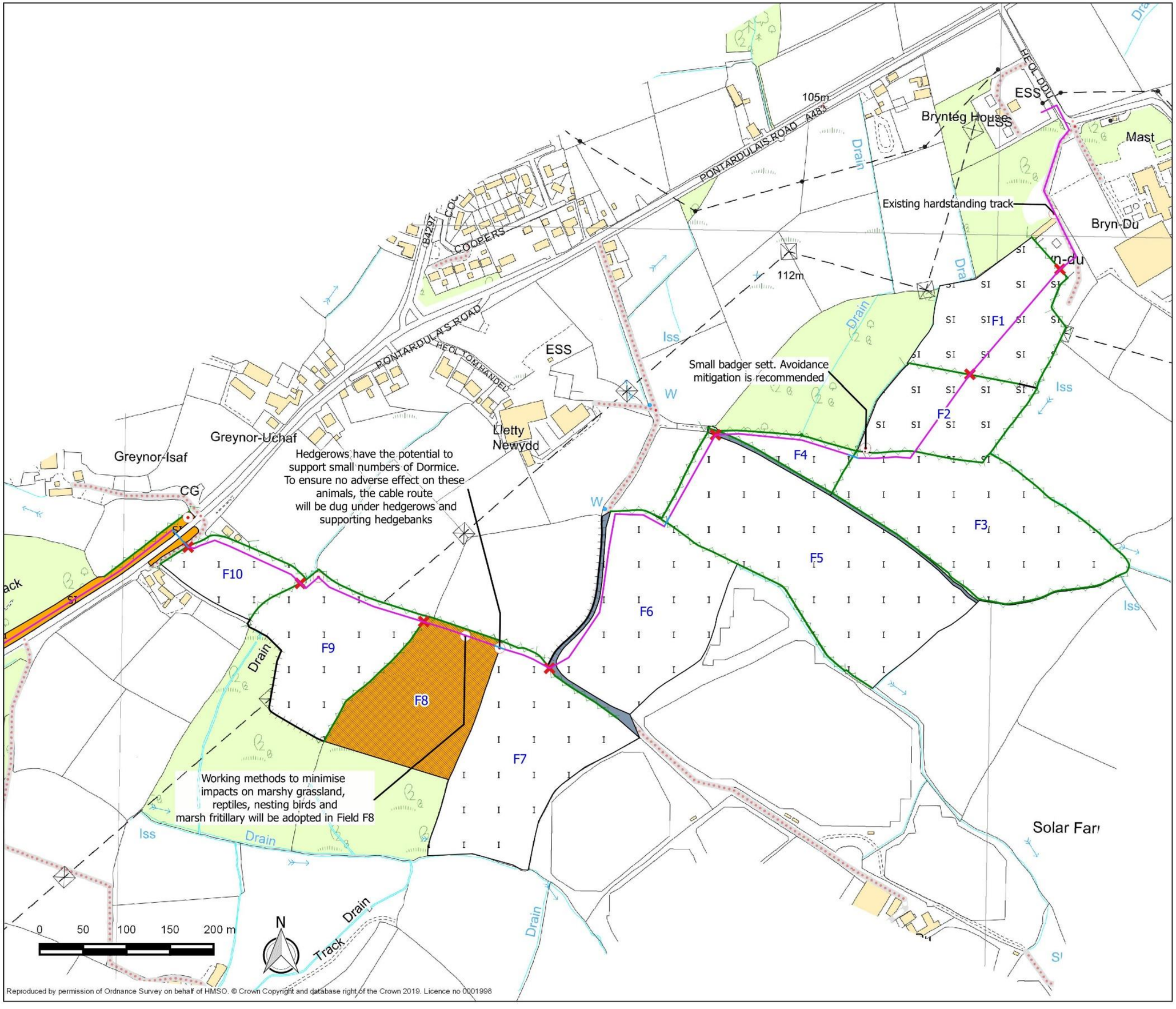
Legend

- Target note
- Gateway
- Intact hedge, native species rich
- Fence
- Species poor semi-improved grassland
- Semi-improved neutral grassland
- Bracken
- Marshy grassland
- Semi-natural broadleaved woodland
- Improved grassland
- Trench
- Trenchless

Title: Map 1a. Phase 1 Habitat Survey - West section

Project: Proposed cable route: Land to the east of the A48 and Land to the south west of Tycroes

Checked by: CDH Version: 03
Date: 29/04/2020



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Legend

- Target note
- Gateway
- Intact hedge, native species rich
- Fence
- Species poor semi-improved grassland
- Semi-improved neutral grassland
- Marshy grassland
- Track
- Improved grassland
- Trench
- Trenchless

Title: Map 1b. Phase 1 Habitat Survey - East section

Project: Proposed cable route: Land to the east of the A48 and Land to the south west of Tycroes

Checked by: CDH Version: 03
Date: 29/04/2020

3.3. Potential for species of nature conservation importance

3.3.1. Habitats have been assessed from the results of the field survey for their potential to support the following protected species. Where there is no potential for a species or species group to be present within the site, or where habitats with the potential to support this species or species group will not be impacted by the proposals, they may be scoped out at this stage.

Amphibians

3.3.2. There are no records for Great Crested Newt within 4km of this site.

3.3.3. It is unlikely that Great Crested Newt are present in this area, whilst habitats for the proposed cable route will only be temporarily disturbed. Amphibians are unlikely to adversely impact by the proposed development and do not need to be considered further.

Badger

3.3.4. Evidence of Badgers are present in the east of the Site with three occasional use entrances in a hedgebank between F2 and F3 close to the cable route.

Bats

3.3.5. No suitable features for roosting bats were present within the footprint of the proposed cable route. Trees associated with woodland along the River Gwili may provide some potential for roosting bats although this area will be traversed by HDD and trees will remain unaffected.

3.3.6. The boundary features will be used by foraging bats.

3.3.7. Research into habitat preferences of bats in Britain (Walsh and Harris, 1996) found that although bats could be found in almost all habitats, they showed clear preference for woodland edges and water bodies along with treelines and hedgerows. Strong avoidance was seen for a number of habitats, including improved grassland, and this was common in all landscapes.

Birds

3.3.8. Scattered scrub, woodland and marshy grassland habitats have potential to support nesting birds.

Common Dormice

3.3.9. Dormice are arboreal and are found within species-rich woodland, hedgerow and woody fruiting scrub. The grassland habitat within much of the cable route footprint would not support this animal.

3.3.10. However, woodland and species rich hedgerows have potential for Dormice, whilst a number of records are present in the surrounding landscape.

Reptiles

3.3.11. Marshy grassland and hedgebanks have some potential for Grass Snake, Slow Worm and Common Lizard.

Otter

3.3.12. It is likely that Otter are actively foraging along the River Gwili although a search of the banks to either side of the proposed cable route, on both sides of the River Gwili, failed to find likely holt sites.

Water Vole

3.3.13. The River Gwili is unsuitable for Water Vole and they do not need to be considered further.

Invertebrates

3.3.14. Habitats at this Site are likely to support common and widespread invertebrates.

3.3.15. Marshy grassland has potential to support marsh fritillary.

Plants

3.3.16. Habitats at this Site have little value for notable plants, although the boundary woodland and hedgerows may support plants of a more restricted distribution.

3.4. Invasive Non-native Species

3.4.1. Japanese Knotweed, a plant listed as Invasive Non-native under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) with respect to England and Wales was present along the bank of the River Gwili just to the north of the crossing points for the cable route of Site 3. However, this plant is approximately 30 metres from the proposed cable route along the opposite bank of the river, and invasive non-native plants do not need to be considered further.

4. **Evaluation of ecological features and potential impacts**

4.1. Background

4.1.1. Ecological features that have the potential to be present have been assessed in light of current nature conservation policy, planning policy and wildlife legislation by an experienced ecologist (see Appendix 1). Where necessary, the ecological value of an ecological feature is given along with the potential effect of the proposed development.

4.1.2. If it is considered that the proposed development is likely to have no effect on features that have been identified as present, or potentially present, they may be scoped out at this stage.

4.2. Habitats of nature conservation importance

4.2.1. Protected habitats: Habitats are protected under international and national legislation including The Conservation of Habitats and Species Regulations 2017, and Wildlife and Countryside Act 1981 (as amended). These have been formulated into policy measures, with many examples protected under formal site designations such as SSSIs and SACs.

4.2.2. No habitats of European Community Importance as defined within The Conservation of Habitats and Species Regulations 2017 were present within this site. Protected habitats of this type are not a consideration for this project.

4.2.3. Notable habitats: Fifty-five habitats are listed as being of key significance to sustain and improve biodiversity in relation to Wales. Under section 7 of the Environment (Wales) Act there is a need for these habitats to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity. These habitats are the subject of National and Local Biodiversity Action Plans. Hedgerows are given particular protection under the Protection of Hedgerows Act 1997.

<u>Intact hedge, species rich</u>

4.2.4. Hedgerows would qualify as a Local Biodiversity Action Plan Priority Habitat and a Habitat of Principal Importance. These features will largely remain intact with small sections being removed to allow cable to pass under the hedgebank in six locations. Mitigation to minimise impact is required.

<u>Semi-natural broadleaved woodland</u>

4.2.5. Woodland to the east of the River Gwili would qualify as a Local Biodiversity Action Plan Priority Habitat and a Habitat of Principal Importance. These features will remain intact with the cable being laid under the woodland using HDD. No mitigation is required for adverse impacts on woodland habitats.

<u>Running water</u>

4.2.6. The River Gwili is present at the western limits of the Site and would qualify as a Local Biodiversity Action Plan Priority Habitat and a Habitat of Principal Importance.

This feature will remain intact with the cable being laid under the river using HDD. No mitigation is required for adverse impacts on the River Gwili.

Marshy grassland

4.2.7. Marshy grassland in F8 and F13 would qualify as Fen, Marsh and Swamp, a habitat listed under Section 7 of the Environment (Wales) Act 2016 and is a Local Biodiversity Action Plan priority habitat. Although still qualifying as marshy grassland for the purpose of this definition, grassland in field F8 is much drier when compared to F13, in particular along its eastern boundary where the cable route will be run. Although methodologies should be adopted to minimise habitat loss and soil compaction in this area, there is no requirement to directional drill beneath F8.

4.2.8. Field F13 is immediately adjacent to Caeau Afon Gwili SSSI which has been designated in part for marsh fritillary. Grassland here is wet and cable will be laid under the grassland using HDD, thereby avoiding impact. No mitigation in relation to F13 is required.

4.3. Species of nature conservation importance

4.3.1. Overview - Many native wild plants and animals are protected by law with the two main legal instruments being the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017. The latter consolidates amendments to the Conservation (Natural Habitats, &c) Regulations 1994 which transposed into UK Law the EU Habitats Directive.

4.3.2. A range of species of fungi, plant or animal are listed in Section 7 of the Environment (Wales) Act 2016 as being of principal importance for the purposes of conserving biodiversity. There is a need for these species to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity. These species are the subject of National and Local Biodiversity Action Plans.

Badger

4.3.3. Badgers are protected from persecution or ill-treatment under the Protection of Badgers Act 1992. Under the Act, it is an offence to:

- wilfully kill, injure or take, or attempt to kill, injure or take, a badger;
- damage a badger sett or any part of it;
- destroy a badger sett;
- obstruct access to, or any entrance of, a badger sett;
- cause a dog to enter a badger sett; or
- disturb a badger when it is occupying a badger sett.

4.3.4. Badgers are actively foraging in the west of the site and three occasional use sett entrances are associated with a hedgebank between Fields F2 and F3, adjacent to the cable route.

4.3.5. Although habitat loss would not impact local Badger populations, there is potential for Badgers to get trapped within the Site during the construction phase if it is fenced,

whilst construction may affect the Badger sett entrances in the hedgebank between F2 and F3 in a way that could be considered an offence. Mitigation is recommended.

Bats

4.3.6. Bat species, and their breeding or resting places (roosts), are protected under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017. They are identified as European Protected Species. Under these laws it is an offence to:

- capture, kill, disturb or injure bats (on purpose or by not taking enough care);
- damage or destroy a breeding or resting place (even accidentally);
- obstruct access to their resting or sheltering places (on purpose or by not taking enough care); or
- possess, sell, control or transport live or dead bats, or parts of them.

4.3.7. Seven species of bat are listed as species “of principal importance for the purpose of conserving biodiversity”.

4.3.8. Although trees along the bank of the River Gwili have unknown potential for roosting bats, this habitat will be avoided by HDD. Furthermore, no other trees with potential for day roosting bats will be removed. No impact is anticipated on roosting bats.

4.3.9. The construction and operation of the proposed cable route would not result in the capture, killing or injuring of bats, nor damage or destroy a breeding or resting place, or obstruct access to a resting place.

4.3.10. Improved grassland habitats have limited value for foraging bats, although marshy grassland, woodland and hedgerows will be important for local bat populations. Adverse effects on foraging and commuting bats associated with temporary disturbance to hedgerow and grassland habitats along the cable route will be extremely limited in extent and short-term, whilst woodland will remain intact.

4.3.11. No mitigation is recommended for bats.

Birds

4.3.12. All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended) from being killed, injured or captured whilst their nests and eggs are protected from being damaged, destroyed or taken. Birds which are listed under Schedule 1 of the Act are given additional protection against disturbance.

4.3.13. A number of species of bird are listed as species “of principal importance for the purpose of conserving biodiversity”.

4.3.14. Woodland, hedgerows and marshy grassland may support occasional nesting birds. Any activities which impact these habitats have potential to adversely impact nesting birds and is likely to require mitigation.

4.3.15. Any activities that expose invertebrates, such as earth worms and grubs, will provide an additional food resource for local birds and will have a positive temporary effect, particularly when adults are feeding nested chicks.

Common Dormouse

4.3.16. Common (or Hazel) Dormice, and their breeding and resting places, are protected under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017). They are identified as a European Protected Species. Under these laws, it is an offence to:

- Capture, kill, disturb or injure Common Dormice (on purpose or by not taking enough care);
- Damage or destroy a breeding or resting place (even accidentally);
- Obstruct access to their resting or sheltering places (on purpose or by not taking enough care); or
- Possess, sell, control or transport live or dead dormice, or parts of dormice.

4.3.17. Common Dormice are listed as a species "of principal importance for the purpose of conserving biodiversity".

4.3.18. Hedgerows and woodland have the potential to support Dormice and there are records for Dormice in the area. Woodland will remain intact although there is potential to impact hedgerow habitat supporting small numbers of animals. Mitigation is required.

Otter

4.3.19. Otter, and their breeding or resting places (holts and couches), are protected under the Wildlife and Countryside Act 1981 (as amended), and The Conservation of Habitats and Species Regulations 2017. They are identified as European Protected Species. Under these laws, it is an offence to:

- capture, kill, disturb or injure otters (on purpose or by not taking enough care)
- damage or destroy a breeding or resting place (deliberately or by not taking enough care)
- obstruct access to their resting or sheltering places (deliberately or by not taking enough care)
- possess, sell, control or transport live or dead otters, or parts of otters

4.3.20. Otter are listed as species “of principal importance for the purpose of conserving biodiversity”.

4.3.21. It is likely that Otter are feeding along the River Gwili although no holts were found. The cable will be laid under the river using HDD. Mitigation is required in relation to HDD to avoid adverse impacts on Otter.

Reptiles

4.3.22. All native reptiles are protected to some degree under the Wildlife and Countryside Act 1981 (as amended), whilst our two rarest species, the Sand Lizard and Smooth Snake, are given full protection under the Act, and also identified as European Protected Species.

4.3.23. The four common species (Slow Worm, Adder, Grass Snake and Common (Viviparous) Lizard) are protected from deliberate killing, injury and trade.

4.3.24. The two rare species, Sand Lizard and Smooth Snake, are given more protection that includes protection from capture and deliberate or reckless killing, injury or disturbance. Their breeding or resting places are also protected from obstruction or damage, even if it were accidental.

4.3.25. All five native reptiles are listed as species "of principal importance for the purpose of conserving biodiversity".

4.3.26. Marshy grassland and boundary habitats have some potential for Grass Snake, Slow Worm and Common Lizard. The temporary loss of habitats to the cable route will not adversely impact foraging reptiles, were they to be present, although construction activities could result in the killing of injury of individuals which may be deemed an offence under the Wildlife and Countryside Act 1981 (as amended). Mitigation is recommended.

Marsh Fritillary

4.3.27. Marsh fritillary are fully protected under the Wildlife and Countryside Act 1981 (as amended and are a species "of principal importance for the purpose of conserving biodiversity".

4.3.28. There is potential for marsh fritillary to be present in marshy grassland associated with Field F8 and F13. Mitigation is recommended.

4.4. Statutory Nature Conservation Sites

National designations

4.4.1. There are 10 SSSIs within 4km of this Site (Table 6). Guidance is given within Section 118 of the National Planning Policy Framework for planning applications on land within or outside an SSSI likely to have an adverse effect on its notified special interest features. Within this guidance it is stated that:

> "*Where an adverse effect on the site's notified special interest features is likely, an exception should only be made* [to grant planning] *where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest*".

4.4.2. Consultation with Natural Resources Wales (NRW) on 03/07/2019 states:

We consider it unlikely that the SSSI's will be significantly affected by the proposed development, as we do not consider there to be a pathway for an effect.

4.4.3. It is expected that the construction and operation of the proposed cable route would have a negligible effect the interest features of these sites, due to separation distance and the habitat types.

4.4.4. No mitigation is recommended in relation to adverse effects on Nationally designated sites (SSSIs).

International designations

4.4.5. Areas of unimproved grassland within certain SSSI units 1.6km to the north have been designated as part of Caeau Mynydd Mawr SAC for the presence of marsh fritillary butterfly, whilst habitats in F8, F13 and W1 have been highlighted as having potential for marsh fritillary within Caeau Mynydd Mawr SAC Supplementary Planning Guidance (SPG).

4.4.6. Consultation with Natural Resources Wales (NRW) on 12/11/2019 states:

We cannot rule out a significant effect from the proposed development on the SAC as part of the site is within the Caeau Mynydd Mawr SAC Supplementary Planning Guidance (SPG) area.

The SPG provides specific guidance in relation to the consideration of potential proposals impacting upon the Caeau Mynydd Mawr SAC and the need to establish a management strategy to ameliorate for the loss of and secure the ongoing and future management of habitat used by the Caeau Mynydd Mawr SAC Marsh fritillary butterfly metapopulation. The SPG focuses on the Caeau Mynydd Mawr SAC Marsh Fritillary core metapopulation area.

4.4.7. The cable route will pass under F13 and W1 and no mitigation for these areas will be required. The cable route will pass along the eastern boundary of F8. This area was dry in May 2019 when it was noted that tractor mowing did not result in significant damage to the ground (Image 8). Mitigation will be adopted here during trenching operations to minimise adverse effects on this habitat.

Image 8. Eastern edge of Field F8 (13/05/2019)

5. Recommendations for mitigation and further surveys

5.1. Mitigation

5.1.1. Where there is potential that the proposed development will have a significant[1] effect on a valued ecological feature of nature conservation interest, recommendations for mitigation are made based on the mitigation hierarchy suggested in Paragraph 118 of the National Planning Policy Framework and detailed in Paragraph: 018 Reference ID: 8-018-20140306 of National Planning Practice Guidance;

- Avoidance –significant harm to wildlife species and habitats should be avoided through design.
- Mitigation – where significant harm cannot be wholly or partially avoided, it should be minimised by design, or by the use of effective mitigation measures that can be secured by, for example, conditions or planning obligations.
- Compensation – where, despite whatever mitigation would be effective, there would still be significant residual harm, as a last resort, this should be properly compensated for by measures to provide for an equivalent value of biodiversity.

5.1.2. Where the detail of a proposal is unknown, such as in outline planning applications, general mitigation will be suggested. This should be re-addressed once final plans are known.

Further survey work

5.1.3. Where further survey work is not recommended, this is because it is the professional judgement of the ecologist that adequate information is already available and further surveys would not make any material difference to the assessment provided.

5.1.4. Where the information within this report is insufficient to allow a full description of the nature conservation features of the site along with a robust assessment of the potential effects on these features, further survey work will be recommended.

5.2. Habitats of nature conservation importance

To ensure compliance with nature conservation legislation and planning policy, the following recommendations are made with regards to habitats:

Intact hedge, species rich

5.2.1. Hedgerows would qualify as a Local Biodiversity Action Plan Priority Habitat and a Habitat of Principal Importance. The cable trench will be dug under hedgerows and supporting hedgebanks. This will require hand-digging to avoid the roots of large shrubs and trees.

[1] For the purposes of this report, a practical approach has been taken to define the term 'significant'. If an effect is sufficiently important to be given weight in the planning process or to warrant the imposition of a planning condition, it is likely to be 'significant' in the context of the level under consideration (BSI, 2013).

Marshy grassland

5.2.2. Marshy grassland in Field F8 has potential to support marsh fritillary. The following mitigation will be adopted:

- Prior to the start of work, the work area will be searched by a suitably qualified ecologist for the presence on the marsh fritillary food plant, Devil's-bit Scabious *Succisa pratensis*. If this plant is present, micro-siting will avoid larger aggregations. If works is completed in late summer, the search will also include marsh fritillary larval webs and any required micro-siting will take these into account.
- The cable route will cross the eastern edge of this field to minimise impact from plant movements. Works will be completed in the summer months, when the ground is likely to be dry. This will minimise any impact from trenching operations.
- The trench will be created using a tracked mini digger. Topsoil and subsoil will not be mixed and will be returned in sequence. Works will be limited to the cable route and the footprint of the mini digger.
- After a settling period of at least 12 months, 200 Devil's-bit Scabious plugs will be planted into the cable route within Field F8.

5.3. Protected species and species of nature conservation importance

To ensure compliance with nature conservation legislation and planning policy, the following recommendations are made with regards to species:

Badgers

5.3.1. There is potential that Badgers may become trapped within the Site during the construction phase. To prevent this, the following is recommended:

- If site security fencing is required, an appropriate gap should be left between the fence and hedgebank/hedgerow.
- Any deep trenches left open at night (>1m deep) should have some means of escape for Badgers, such as the placement of a scaffolding board at one end.

5.3.2. Construction may affect the three occasional use Badger sett entrance in the hedgebank between Fields F2 and F3, or animal within it, in a way that could be considered an offence.

5.3.3. These entrances have small spoil heaps, suggesting a short tunnel, whilst any animal present here is going to be normalised to certain levels of disturbance due to ongoing agricultural operations at this site. Provided a 20 metre buffer is left, it is unlikely that this sett, or any Badger within it, will be impacted in a way that is likely to be an offence.

5.3.4. Should permission to develop be successful, a Badger survey should be completed as near as practicable to the start of site development. This will ensure the assessment and resultant mitigation to be adopted during construction will be based

on the most recent distribution of sett entrances likely to be affected. If the sett entrances are still active, the cable trench could be moved away from the hedgebank to avoid these sett entrances by at least 20 metres.

Dormice

5.3.5. Hedgerows have the potential to support small numbers of Dormice. To ensure no adverse effect on these animals,

5.3.6. No other habitats suitable for Dormice will be impacted.

Nesting birds

5.3.7. Boundary hedgerows, woodland and marshy grassland have potential for nesting birds. Woodland and marshy grassland in Field F13 will be traversed by HDD, whilst the cable will be dug under hedgebanks and the hedgerows they support.

5.3.8. Marshy grassland in Field F8 will be subject to trenching in the bird nesting season to minimise impacts associated with damp ground. Prior to the start of works this habitat should be thoroughly inspected by a suitably qualified person prior to disturbance. If nesting birds are found, all activities likely to damage the immediate area should be delayed until chicks have fledged.

5.3.9. Any activities that expose invertebrates, such as earth worms and grubs, will provide an additional food resource for local birds and will have a positive temporary effect, particularly when adults are feeding nested chicks.

Otter

5.3.10. Mitigation is required in relation to HDD to avoid adverse impacts on Otter associated with the River Gwili as follows:

- Daytime working hours will be adopted for any construction works, to commence no sooner than one hour after sunrise and finish no later than one hour before dusk.
- At night, a quiet dark corridor will be retained along the watercourse and its bankside vegetation;
- Construction materials will be stored well away from the watercourse in way that prevents otters gaining access or using them to rest in (*e.g. pipe ends will be capped or covered*);
- Any trenches that are left open overnight will have planks of wood placed at regular intervals to allow otters a way out; and
- All tools, food, litter and construction materials and packaging that may constitute a hazard to otters will be removed daily from the site.

Reptiles

5.3.11. Marshy grassland and hedgebanks have some potential for Grass Snake, Slow Worm and Common Lizard. Woodland and marshy grassland in Field F13 will be traversed by HDD, whilst the cable will be dug under hedgerows and supporting hedgebanks.

5.3.12. Marshy grassland in Field F8 will be subject to trenching. Further survey work is not considered appropriate or proportionate due to the limited extent of this habitat for

reptiles, and the high potential for reasonable avoidance measures to successfully ensure that no reptiles are killed or injured during trenching. By following simple mitigation, any adverse impact can be avoided.

5.3.13. Trenching will occur during the active reptile season (late March to October). Following any breeding bird surveys, areas to be affected by construction activities should be de-vegetated prior to any site activities under the supervision of a suitably qualified ecologist. Grassland to be removed will initially be strimmed to a height of no more than 20cm, having first used an ecologist to walk and beat the habitat. This will encourage reptiles to disperse naturally into the neighbouring uncut vegetation to the east, north and west of the site. After at least 24hrs a second cut will be made as close to ground/bank level as possible. This should ensure that Grass Snake, if present, are displaced from the construction site onto adjacent intact habitats to the east, north and west.

Marsh fritillary

5.3.14. The above mitigation in relation to marshy grassland in Field F8 will ensure marsh fritillary are not impacted in a way that could be considered an offence and will protect their status at this site.

5.4. Statutory Nature Conservation sites

5.4.1. A working method statement in relation to marsh fritillary and marshy grassland is provided for works in Field F8. In combination with horizontal direct drilling under Field F13 and Woodland W1, this will ensure the proposed cable route will have no significant effect on Caeau Mynydd Mawr SAC.

5.4.2. A Habitat Regulations Screening Assessment has been completed in relation to Caeau Mynydd Mawr SAC. The conclusion is:

> *Likely Significant Effect, alone or in-combination, on Caeau Mynydd Mawr SAC is screened out.*

5.4.3. This is provided under a separate cover. A developer contribution in relation to the Caeau Mynydd Mawr SAC SPG is not required.

5.5. Summary of net gains and losses

5.5.1. Table 7 provides a summary of net gains and losses to biodiversity resulting from the proposed development with mitigation, but without biodiversity enhancement.

Table 7. Summary of net gains and losses to biodiversity

Nature conservation feature	Potential impact	Proposed mitigation	Outcome/Comments
Hedgerows	Loss of habitat	The cable trench will be dug under hedgerows and supporting hedgebanks. This will require some hand-digging to avoid the roots of large shrubs and trees.	Impact avoided

Marshy grassland	Loss of habitat	HDD under Field F13 and method statement for working in Field F8	Impact avoided in Field F13 and minimised in Field F8.
Badgers	Becoming trapped within the site. Impact on a sett that could be considered an offence.	Proper design and placement of security fences. Escape routes provided. 20 metre buffer between sett entrance and the development.	Impact avoided Offence avoided
Dormouse	Damage to supporting habitats and disturbance during the construction phase	The cable trench will be dug under hedgerows and supporting hedgebanks. This will require some hand-digging to avoid the roots of large shrubs and trees.	Impact avoided
Nesting Birds	Damage to supporting habitats and disturbance during the construction phase Direct harm or injury. Increased food items during construction.	Marshy grassland in F8 will be subject to trenching in the bird active season to minimise impacts associated with wet ground. Prior to the start of works, grassland should be thoroughly inspected by a suitably qualified person for nesting birds prior to disturbance or removal. If nesting birds are found, all activities likely to damage the immediate area should be delayed until chicks have fledged. Any activities affecting hedgerow and shrubs habitats should be completed during the period September to February inclusive, outside the accepted bird nesting season	Impact avoided Direct harm and injury avoided Temporary positive gain
Otter	Direct harm and habitat loss.	Mitigation adopted during HDD on River Gwili	Impact avoided
Reptiles	Direct harm or injury.	Reasonable avoidance measures adopted during works	Impact avoided
Marsh fritillary	Direct harm and habitat loss.	HDD under Field F13 and method statement for working in Field F8	Impact avoided
Caeau Mynydd Mawr SAC	Potential impact during construction and on-going operation.	A working method statement in relation to marsh fritillary and marshy grassland is provided for works in Field F8. In combination with horizontal direct drilling under Field F13 and Woodland W1, this will ensure the proposed cable route will have no significant effect on Caeau Mynydd Mawr SAC.	Impact avoided

6. Further survey work

6.1. Assessment of need for further survey work

6.1.1. Information within this report is sufficient to allow a robust assessment of the potential effects on the majority of ecological features associated, or potentially associated, with this site.

6.1.2. However, the following surveys are recommended:

Badgers - Should permission to develop be successful, a further Badger survey should be completed as near as practicable to the start of site development. This will ensure the assessment and resultant mitigation to be adopted during construction will be based on the most recent distribution of sett entrances likely to be affected.

Breeding bird survey – Marshy grassland in F8 will be subject to trenching during the bird active season to minimise impacts associated with wet ground. Prior to the start of works, grassland should be thoroughly inspected by a suitably qualified person for nesting birds prior to disturbance or removal. If nesting birds are found, all activities likely to damage the immediate area should be delayed until chicks have fledged.

7. References

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8. Appendix 1:

Legislation and Policy used to assess habitats and species

8.1.1. European Habitats and Species Directive (CEC, 1992)

The main aim of the Habitats Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

8.1.2. European Red Data lists (IUCN, 2000)

International Union for Conservation of Nature (IUCN and the European Commission have been working together on an initiative to assess around 6,000 European species according to IUCN regional Red Listing Guidelines. Through this process they have produced a European Red List identifying those species which are threatened with extinction at the European level so that appropriate conservation action can be taken to improve their status.

8.1.3. European Council Birds Directive (CEC, 1979)

The Directive provides a framework for the conservation and management of, and human interactions with, wild birds in Europe. An important part of this Directive is the identification and classification of Special Protected Areas (SPAs) to protected vulnerable bird species listed in Annex 1 of the Directive and regularly occurring migrating species.

8.1.4. The Wildlife and Countryside Act (WCA) 1981 (as amended)

This Act is the primary legislation that protects animals, plants and certain habitats in the UK.

8.1.5. The Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 consolidate and update the Conservation of Habitats and Species Regulations 2010, and transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (“the Habitats Directive”) and elements of Directive 2009/147/EC on the conservation of wild birds (“the Birds Directive”) in England, Wales, and to limited extent, Scotland and Northern Ireland.

The objectives of the Habitats Directive is to protect biodiversity through the conservation of natural habitats and species of wild fauna and flora. The Directive lays down rules for the protection, management and exploitation of such habitats and species.

The Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species. These sites form a network termed Natura 2000 and include Special Areas of Conservation and Special Protection Areas.

8.1.6. Protection of Badgers Act 1992

The Protection of Badgers Act 1992 consolidated and improved previous legislation. Under the Act it is an offence to kill, injure or take a Badger, or to damage or interfere with a sett used by a Badger unless a licence is obtained from a statutory authority.

8.1.7. The Hedgerow Regulations 1997

The Hedgerows Regulations 1997 protect certain hedgerows from being removed (uprooted or destroyed) if they meet certain criteria.

8.1.8. The Countryside and Rights of Way (CRoW) Act 2000

This Act increases measures for the management and protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation.

8.1.9. Circular 06/2005 Biodiversity and geological conservation – statutory obligations and their impact within the planning system

This circular provides administrative guidance on the application of the law relating to planning and nature conservation as it applies in England. It complements the national planning policy in the National Planning Policy Framework and the Planning Practice Guidance.

8.1.10. Natural Environment and Rural Communities Act 2006

The Act made amendments to the both the Wildlife and Countryside Act 1981 and the Countryside and Rights of Way (CROW) Act 2000. For example, it extended the CROW biodiversity duty to public bodies and statutory undertakers.

8.1.11. UK Post-2010 Biodiversity Framework, 2012

The 'UK Post-2010 Biodiversity Framework', published in July 2012, succeeds the UK BAP and 'Conserving Biodiversity – the UK Approach', and is the result of a change in strategic thinking.

8.1.12. Planning (Wales Act) 2015

As of 6th July 2015, the Planning (Wales) Act 2015 came into force. This Act puts into place delivery structures, processes and procedures to create a modern delivery framework for the preparation of development plans and planning decisions, ruling that any statutory body carrying out a planning function must exercise those functions in accordance with the principles of sustainable development as set out in the Well-being of Future Generations (Wales) Act 2015.

8.1.13. Planning Policy Wales 2016 (Ninth Edition)

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government, establishing a commitment towards sustainable development within the planning system. It envisions the planning system to recognise the threat of climate change,

and to reconcile the need of development and conservation; fundamental for sustainable development.

8.1.14. The natural choice: securing the value of nature (2011) (Natural Environment White Paper)

This White Paper outlines the Governments vision for the future of landscape and ecosystem services.