

Preliminary Ecological Appraisal  
Legacy Farm Solar Project, Bangor-on-Dee, Wrexham  
July 2022

A report by

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## Report details

Site name: Legacy Farm Solar Project  
Site address: Land between A483 and Bangor-on-Dee,  
Grid reference: SO 796 507  
Survey date: 17<sup>th</sup> & 18<sup>th</sup> May 2022  
Report date: 14<sup>th</sup> September 2022  
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Report no: WOR-3021

## 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 12 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
14/09/2022	WOR-3021	CDH	Initial report

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## Non-technical summary

Western Ecology has been commissioned to complete a preliminary ecological appraisal of three discrete parcels of agricultural land close to the town of Wrexham. A 100MW solar farm, with an associated substation, security fencing, internal access roads and battery storage is proposed.

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

### Native hedgerow

If the proposals result in any extent of hedgerow habitat being lost to the development, an equal extent of hedgerow should be replanted using a mix of native shrubs of local provenance. Any cable routes should be installed under existing hedgerows, rather than removing sections of hedgerow. This will ensure that hedgerows maintain canopy connection and do not become fragmented. All retained hedgerow should also be protected from accidental damage during the construction phase by a suitable buffer of at least 5 metres (see Section 5: Dormice).

### Semi-natural broadleaved woodland

It is unlikely that the proposals will result in the loss of any woodland habitat. All retained woodland habitat should be protected from accidental damage during the construction phase by a suitable buffer zone informed by the arboriculture survey.

### Running water: streams

The riparian habitats should be protected from construction activities through the implementation of a Construction and Environmental Management Plan (CEMP). See *Section 5.2* for further details.

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

### Amphibians

There is potential for Great Crested Newt to be utilise aquatic and terrestrial habitats associated with the Site. Presence/absence surveys (including HSI assessments) should be completed of all accessible waterbodies within 250m of the Site. Results of these surveys will inform any mitigation that may be required.

### Badgers, Brown Hare & Hedgehog

There is potential that Badgers, Brown Hare, Hedgehogs and other mammals may become trapped within the construction site during the development phase, while any permanent security fencing may also prevent animals from dispersing through the Site. Simple mitigation to allow movement through the Site and to provide excavations with a means of escape is recommended.

### Bats:

#### Roosting

If plans show mature trees (associated with hedgerows, woodland or open fields) are to be impacted by the proposed development, an inspection of the tree(s) by a

suitably qualified and licensed ecologist will be required prior to the commencement of works. If any evidence of bats is found, further surveys may be required.

## Birds

### Breeding habitat

Hedgerow, scrub and tree habitats may support widespread and common nesting bird species, while arable habitats may support notable ground nesting species.

Breeding bird surveys should be completed to allow an informed assessment of likely impact to breeding bird populations at this Site.

### Wintering habitat

Open arable/grassland field compartments provide some suitability for winter foraging by notable farmland birds. Winter bird surveys are recommended to inform a robust assessment of impact on birds of open habitats.

## Hazel Dormice

Mitigation is required to minimise the risk of any hedgerow removal, cable trenching and general construction works impacting Dormice. Further details are contained in Section 5 – Dormice.

## Reptiles

Semi-natural habitat (hedgerows, woodland, scrub, ditches & rough grassland) mostly associated with the field boundaries, provide some potential for common reptiles.. Sympathetic site clearance involving RAMS should also be implemented to avoid killing or injuring individual reptiles. Further details are contained within *Section 5.3 – Reptiles*.

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

Japanese Knotweed is growing within a grass field in Area 2. A Japanese Knotweed management plan should be developed which should manage risks involved with the construction and operational phases of the development and include a scheme of treatment which would need to be informed by a survey mapping its precise extent.

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

The north-western edge of Area 1 is within a 300m SSSI Buffer zone for the Johnstone Newt Sites SAC/ Stryt Las a'r Hafod SSSI. The Site features sufficient separation distance from these designations (~200m and separated by the A483 highway), while also lacking direct connectivity and it is unlikely that the proposed development would result in direct impacts to the GCN population for which this site is designated. However, there is a requirement for the planning authority consult Natural Resources Wales.

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

#### Dingle & Well Wood Wildlife Site, Oak Wood Wildlife Site and Hopyard Wood Wildlife Site

These NNCS relate to areas of woodland within Areas 1 & 3. These potential impacts should be mitigated through the implementation of the CEMP, as already detailed in Section 5.2, however it should be expanded to also include a specific focus on protecting habitats within the woodland areas associated with Yorke's Dingle & Well Wood, Oak Wood and Hopyard Wood Wildlife Sites. See Section 5.5 for further details.

#### Further survey work

It is recommended that the following species/group specific surveys are completed to ensure compliance with wildlife legislation and relevant planning policy:

##### Great Crested Newt

Habitat suitability index (HSI) should be calculation for all waterbodies within 250 metres (as per ARG UK Advice Note 5). For waterbodies that are judged suitable, Environmental DNA (eDNA) surveys should be completed.

##### Bats

##### Roosting

If mature trees are to be impacted, they should be assessed for their potential to support roosting bats in line with Collins et al, 2016. This may include inspection from height and emergence surveys in the bat active period.

##### Birds

##### Breeding bird surveys

Breeding bird surveys should be undertaken to identify the use of the site by breeding birds. This should comprise a suitably experienced surveyor walking a predetermined transect and recording all birds seen or heard onto pre-printed maps using BTO codes and symbols to describe species present and associated activity. Three early morning visits should be completed between April to June.

##### Wintering bird surveys

Wintering farmland bird surveys should be completed for the larger, more open fields in Area 2 & 3. This should comprise monthly transect surveys walked by an experienced ornithologist in the period November to March.

No other survey work is recommended for this site.

# 1. Introduction

Western Ecology has been commissioned to complete a preliminary ecological appraisal of three discrete parcels of agricultural land close to the town of Wrexham. A 100MW solar farm, with an associated substation, security fencing, internal access roads and battery storage is proposed.

## 1.1. Survey aims

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.

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).

## 1.2. Site location

The total site comprises three separate areas of agricultural land, all located immediately north of the B5426 highway and broadly situated between the A483 dual carriageway and the village of Bangor-on-Dee in Wrexham County Borough. The sites are located approximately 2.6km to the south of the town of Wrexham (at the closest point).

## 2. Survey methodology

### 2.1. Desktop survey

A 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.

Consultees for the data search included:

- COFNOD (North Wales Environmental Information Service) provided biological records for protected/notable species, and statutory & non-statutory sites within 1km of the centre of each of the sites.
- Natural Resource Wales - Statutory nature conservation sites, priority habitats and granted European Protected Species license applications.

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.

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.

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

A Preliminary Ecological Appraisal of the site was completed by James Gilroy BSc (Hons), MSc.

The survey was undertaken during daytime hours on 17<sup>th</sup> and 18<sup>th</sup> May 2022. Weather conditions during the survey were warm, dry and sunny overcast with air temperatures between 17-22°C, light breezes and 40-70% cloud cover.

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 according to the UK Habitats Classification definitions (UK Habitat Classification Working Group, 2018). Habitats encountered are described within the Results section, with a map included within the report. Plant species were identified according to Stace (1997).

All accessible waterbodies within the site were evaluated for their potential to support Great Crested Newt by calculating a habitat suitability index (HSI) as per ARG UK Advice Note 5.



## 2.3. Method for valuation of habitats

The ecological value of habitats present is provided in line with Guidelines for Ecological Impact Assessment (CIEEM, 2018), and those which are important in terms of legislation or policy are identified.

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 Wrexham);
- 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

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.

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 valid for two years, after which time it will need updating. This report is valid until 18<sup>th</sup> May 2024.

## 2.5. Study area

The study area for the desktop survey is within 1km for species and non-statutory sites and 2km for statutory sites. The study area for the Preliminary Ecological Appraisal was the footprints of the proposed developments, hereafter referred to as the 'Site' or 'Sites', and the immediate boundaries. This is the area included within the line described as "Survey area" within the legend of Maps 1-4.

## 3. Results

### 3.1. Site description

The Site concerns three separate areas (Areas 1 - 3, see Maps 1-4) of agricultural land mostly comprised of arable fields, with occasional fields of pasture or silage crops. The field compartments are enclosed by a mixture of managed hedgerows, woodland edge, lines of trees, fencing or occasional ditches. Other habitats that are contained within the Site include mixed scrub, semi-natural broadleaved woodland, and small pockets of semi-improved grassland and ruderal communities which are mostly associated with field margins. Minor watercourses are present within Areas 1, 2 & 3 and a total of 7 ponds are contained across the 3 sites. Access roads of bare ground, hard standing and tarmac are present in Areas 2 & 3 areas.

### 3.2. Phase 1 habitats

Habitats have been classified using the Phase 1 Habitat Survey methodology, and are described below and detailed in Map 1. 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 purposes, and comprehensive inventory is not provided.

Table 1: Habitat description, biodiversity value and extent.

Phase 1 habitats	Description	Biodiversity value
Developed land	Areas of hardstanding, tarmac and made ground were associated with farm storage areas and access roads through the Site. These areas supported very little vegetation.	Negligible
Arable	Arable land was the most frequent habitat, particularly in Areas 2 & 3 and comprised crops of autumn/winter sown cereal. All of the arable habitats were monoculture crops and provided a tall, dense cover. The arable habitats generally lacked any field margins	Negligible
Improved grassland	Improved grassland habitats occupied entire field compartments (either grass leys or grazed) in Areas 1, 2 & 3, as well as occurring as narrow margins at the edges of some fields and in amenity areas such as along access track verges. Sward height was generally uniform, and some fields had been recently mown. This habitat was dominated by several grass species such as Perennial Rye-grass, Timothy, Cock's-foot, Meadow Fescue or other agricultural grasses, and contained very occasional forbs such as Dandelion, Creeping Buttercup and White Clover.	Site
Species poor semi-improved grassland	This habitat occurred through the Site, generally associated with areas such as road/track verges, field and watercourse/ditch margins, as well as occasional entire field compartments. Management such as regular mowing or grazing was usually evident and sward was generally uniform, supporting mainly grasses with some herbs. Species composition included Cock's-foot, Tall Fescue, Red Fescue Yorkshire Fog, Timothy, Common Nettle, Hogweed, Common Mouse-ear Creeping Buttercup, Thistle spp., Broad-leaved Dock. Soft Rush was also locally abundant in some damper areas of fields in Area 1.	

Semi-improved neutral grassland	This grassland habitat was occasional within the Site, occurring as discrete pockets within wider fields of species poor semi-improved grassland, and generally occurring on steeper ground. It featured a higher species diversity than surrounding grassland habitats, containing species such as Yorkshire Fog, Red Fescue, Crested Dog's-tail, Sweet Vernal-grass, Creeping Bent, Yorkshire Fog, Meadow Buttercup, Creeping Buttercup, Creeping Cinquefoil, Yarrow, Knapweed Bird's-foot Trefoil, Selfheal, Dandelion and Ribwort Plantain.	Site
Ruderal/ephemeral	Associated with waste/unmanaged ground at edges of farm compounds, disturbed areas within/at the edge of woodlands or at field edges. The habitat comprised tall ruderal herbs such as Common Nettle, Hogweed, Cow Parsley, Hedge Bindweed, Dock spp., Thistle spp., Teasel, Burdock, Bramble, Bracken and Rosebay Willowherb.	Site
Mixed scrub	Mixed scrub occurred across the Site generally as small pockets at the edges of fields, around pond basins or across waste ground. Species comprised native shrubs such as Willow spp., Hazel, Blackthorn, Hawthorn, Alder, Silver Birch, Sycamore, Ash, English Elm and Elder. Ground flora mainly comprised rough grasses, Bramble, Common Nettle, Cleavers, Hemlock water-dropwort and Broad-leaved dock.	Site
Semi-natural broadleaved woodland	Blocks of woodland are present in Areas 2 & 3 and contained mostly mature trees with other age classes present such as young and early mature trees. Tree species included Oak sp., Ash, Beech, Elm sp., Alder, Sycamore and occasional non-native conifers. The shrub layer was generally sparse across all woodland habitats and included species such as Hawthorn, Elder, Willow sp. Hazel, Holly and Willow sp. The woodland areas generally featured a continuous canopy and a shelter belt of shrubs along the outer edge. Some of the woodland blocks have been replanted and contain mostly early mature trees. Some of these areas have also been recently managed with large areas cleared habitat. Ground flora in undisturbed woodland blocks included Wood Melick, False Brome, Bramble, Bluebell, Wood Anemone, Red Campion, Dog's Mercury, and Fern spp. The presence of AWIs in the ground flora suggest the woodland areas are semi-natural as opposed to plantation. Ground flora in disturbed areas featured a ruderal composition, with frequent Bracken, Hogweed, Willowherb spp., Common Nettle and Mare's-tail.	Local: this habitat qualifies as a Habitat of Principal Important (JNCC & Defra, 2012)
Standing water: pond	A total of 6 ponds are located within the Sites; one pond is located within Area 1, two ponds in Area 2 and three ponds in Area 3. Descriptions for ponds and HSI scores are contained in Table 2.	Site
Running water: stream	Minor streams are present in each of the sites, mostly associated with woodland areas or hedgerow boundaries. The watercourses all contained shallow flowing water, were ~1-1.5m wide and supported very little aquatic vegetation. The banks were vegetated with either woodland ground flora or a mixture of grasses, ruderal herbs and scattered trees and shrubs such as Hazel,	Local: this habitat qualifies as a Habitat of Principal Important (JNCC & Defra, 2012)

	Hawthorn, Willow sp., Alder and Oak. The stream in Area 1 experiences poaching from cattle.	
Dry ditch	Ditches were present across all three areas and most were dry at the time of survey, although may periodically contain water. Ditches were densely vegetated with rough grasses and ruderal herbs such as Cock's-foot, Burdock, Soft Rush, Spear Thistle, Rosebay Willowherb and Ragwort. A ditch in Area 3 contained some water and supported emergent vegetation such as Typha sp., Water parsnip, Iris sp., and Soft rush.	Site
Native hedgerow	Hedgerows of native shrubs and trees provided boundaries to the field compartments across the Site. Hedgerows are categorised in Maps 2-4 as; species poor (dominated by several woody species), species-rich (containing >6 woody species) and hedgerows with frequent mature trees. Species included Hawthorn, Blackthorn, Elder, Sycamore, English Elm, Oak spp. and Ash. Ground flora generally comprised Bramble, Dog rose, Ivy, Common Nettle, Hogweed, and common grasses. Management of hedgerows varied across the Site, with closely managed and gappy hedgerows mostly occurring in Areas 1 & 3. Hedgerows in Area 2 generally exhibited taller and wider structures. Some hedgerows had ditches associated with them and most had margins of between 1-2m of rough vegetation.	Local: this habitat qualifies as a Habitat of Principal Importance (JNCC & Defra, 2012)
Line of trees	Lines of mature trees existed occasionally through the Site, and resulted from outgrown hedgerows. Trees species predominantly contained Oak sp. and featured canopy connectivity, although frequent horizontal gaps were present between the trees. Ground flora consisted of rough grasses and ruderal herbs such as Common Nettle.	Site
Fence	A mixture of stock fencing and post & rail fencing delineates some boundaries. Vegetation cover varied and where present usually consisted of narrow margins (<1m) of rough grasses and ruderals.	Negligible
Scattered scrub	Scattered scrub was mostly associated with some areas at the edges of woodland, along fence lines or on waste ground and consisted of individual shrubs across the surrounding ruderal/grass vegetation. Shrubs were mostly young and included Hazel, Alder and Hawthorn.	Site

Table 2: Pond description, Habitat Suitability Index (HSI) value for ponds within the Site. Locations of ponds are contained in Maps 2-4.

Pond Number	Pond description	HSI score
<u>Area 1</u> - Pond 1	Medium sized pond, at edge of field and in a shallow basin surrounded by Willow scrub, providing ~ 80% shading. Pond likely to occasionally dry, with low water levels at time of survey. Limited aquatic vegetation consisted of pond weed spp., Bittersweet and Water mint.	0.71 – good

<u>Area 2</u> - Pond 1	A large pond with adjoining areas. Mostly encompassed by bankside scrub and trees which provide ~70% shading. Emergent and aquatic vegetation provide ~15-20% cover and include Typha sp., Iris sp. and pond weed spp.	0.70 - good
<u>Area 2</u> - Pond 2	A relatively open pond in quite a shallow basin at a field corner. Bankside trees/shrubs provide ~60%. Little aquatic or emergent vegetation. Water is quite turbid.	0.68 - average
<u>Area 2</u> - Pond 3	A small pond associated with a ditch along the northern boundary, it is heavily shaded from overhanging shrubs/trees. Very little aquatic vegetation.	0.48 - poor
<u>Area 3</u> - Pond 1	A steep sided basin, holding some open water and heavily vegetated with emergent vegetation dominated by Typha sp., with occasional Soft rush, Greater Willowherb and Brooklime. Basin sides vegetated with ruderals and rough grasses.	0.61 - average
<u>Area 3</u> - Pond 2	A medium sized pond located in the middle of an arable field and surrounded by dense scrub, providing ~90% shading. Very little aquatic vegetation and water is turbid.	0.63 - average
<u>Area 3</u> - Pond 3	A large woodland pond surrounded by semi-natural broadleaved woodland which provides ~80% shading. Scattered Willow sp. shrubs growing in basin. Little aquatic vegetation, consisting of predominantly duckweed provides ~15% cover. Waterfowl likely to use pond regularly given the size.	0.67 - average

### 3.3. Desktop survey

A biological records search was obtained for each of the three sites. The biological records search found a number of notable species within 3 km of the Site. Due to the broad scale of many records, it is not possible to determine if they relate to the Site.

Table 3. Notable species records (other than birds) within 1km

Taxon	Species	Number of records within 1km of Area 1	Number of records within 1km of Area 2	Number of records within 1km of Area 2	UK Legislation/ Conservation Status
Amphibians	Common Frog	27	0	0	LBAP-A, LBAP-C, LBAP-F, LBAP-T, WCA5
	Common Toad	20	0	0	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-T, S7, WCA5
	Great Crested Newt	76	6	3	BAP <sup>1</sup> , LBAP-A <sup>2</sup> , LBAP-C <sup>3</sup> , LBAP-D <sup>4</sup> , LBAP-F <sup>5</sup> , LBAP-S <sup>6</sup> , LBAP-T <sup>7</sup> , LBAP-W <sup>8</sup> , S7 <sup>9</sup> , WCA 5 <sup>10</sup>
	Palmate Newt	39	0	0	LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-T, WCA5
	Smooth Newt	48	0	0	LBAP-C, LBAP-D, LBAP-F, LBAP-T, WCA5
	Newt sp.	65	4	0	LBAP-C, LBAP-D, LBAP-F, LBAP-T, WCA5

<sup>1</sup> BAP - UK Biodiversity Action Plan Priority Species

<sup>2</sup> LBAP-A - Anglesey Local Biodiversity Action Plan

<sup>3</sup> LBAP-C - Conwy Local Biodiversity Action Plan

<sup>4</sup> LBAP-D - Denbighshire Local Biodiversity Action Plan

<sup>5</sup> LBAP-F - Flintshire Local Biodiversity Action Plan

<sup>6</sup> LBAP-S - Snowdonia National Park Authority Local Biodiversity Action Plan

<sup>7</sup> LBAP-T - North and Mid Wales Trunk Road Agent Biodiversity Action Plan

<sup>8</sup> LBAP-W - Wrexham Local Biodiversity Action Plan

<sup>9</sup> S7 - Environment (Wales) Act 2016 (Section 7)

<sup>10</sup> WCA 5 Wildlife and Countryside Act (1981) Schedule 5: species protected against killing, injury, disturbance and handling.

Bats	Common Pipistrelle	2	3	3	LBAP-A, LBAP-D, LBAP-F, LBAP-G <sup>11</sup> , LBAP-S, S7, WCA5
	Soprano Pipistrelle	1	0	0	BAP, LBAP-A, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7, WCA5
	Daubenton's Bat	1	0	0	LBAP-C, LBAP-D, LBAP-F, LBAP-G, WCA5
	Myotis sp.	1	0	0	WCA 5
	Unidentified Pipistrelle	1	1		LBAP-C, S7, WCA5
	Noctule	0	0	0	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7, WCA5
	Unidentified bat	2	2	0	WCA 5
Mammals	Eurasian Badger	6	3	0	LBAP-C, LBAP-D, LBAP-F, LBAP-W, PBA <sup>12</sup>
	Brown Hare	2	2	0	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7
	West European Hedgehog	1	1	1	BAP, LBAP-A, LBAP-C, LBAP-F, LBAP-G, S7
	Water Vole	1	1	1	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, LBAP-T, S7, WCA5
	Otter			1	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, LBAP-T, LBAP-W, S7, WCA5
Reptiles	Grass Snake	6	0	0	
Invertebrates	Dingy Skipper	2	0	0	BAP, LBAP-C, LBAP-F, LBAP-G, S7
	Grayling	1	0	0	BAP, LBAP-G, S7
	Small Heath	1	0	0	BAP, LBAP-G, S7
	Wall	2	0	0	BAP, LBAP-G, S7
	White-letter Hairstreak	1	0	0	BAP, LBAP-F, S7, WCA5
	Southern Yellow Splinter	1	0	0	BAP, S7
Plants	Common Mouse-ear	3	2	3	BAP

## Birds

The record search returned numerous records for birds, many of which are common widespread species. Records for notable species within 1km of Area's 1-3 are contained in Appendix 3.

## Statutory nature conservation sites (SNCS)

<sup>11</sup> LBAP-G - Gwynedd Local Biodiversity Action Plan

<sup>12</sup> PBA - Protection of Badgers Act 1992

There are no SNCS located within 1 km of Area 2 & 3. Details of SNCS located within 1 km of Areas 1 are contained in Tables 4 below.

Table 4 Statutory nature conservation sites (SNCS) within 1 km of Area 1

Site name	Description	Distance from centre of Site
<b>Stryt Las a'r Hafod Site of Special Scientific Interest (SSSI)</b>	Water bodies noted for their amphibians, particularly Great Crested Newt.	358m to the west.
<b>Johnstown Newt Sites Speacial Area of Conservation (SAC)</b>	Post-industrial sites of coal and clay extraction with habitat supporting one of the largest known populations of Great Crested Newt in Great Britain; the focus of much conservation management in recent years.	358m to the west.

#### Non-statutory nature conservation sites (NNCS)

Details of NNCS located within 1 km of Areas 1-3 are contained in Tables 5, 6 & 7 below.

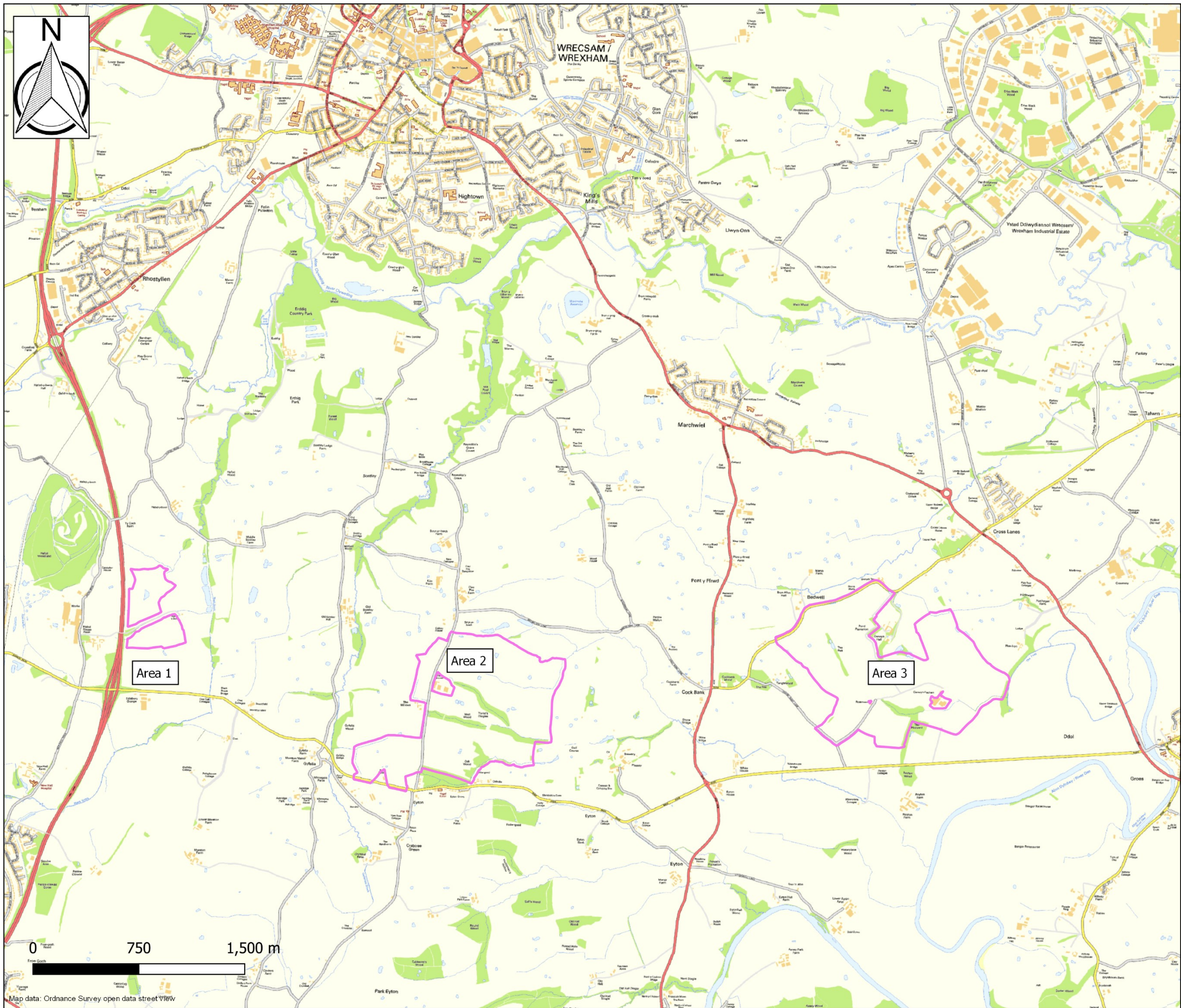
Table 5 Non-statutory nature conservation sites (SNCS) within 1 km of the Site.

Site name	Description	Distance from centre of Site
Erddig Estate Wildlife Site (191.6 Ha)	Large estate (National Trust) comprising various habitats of woodland, semi-improved neutral grassland and marshes.	745m to the north-east of Area 1.
Yorke's Dingles and Well Wood Wildlife Site	No information available	Lies within Area 2
Oak Wood Wildlife Site (2.1 Ha)	Grazed mature oak wood with understorey of holly, hawthorn and field maple.	Lies within Area 2
Gefeiliau Brook Wildlife Site (14.4 Ha)	A series of woods, marshes and neutral grasslands running north to south along the Gefeiliau Brook.	600m to the west of Area 2
Hopyard Wood Wildlife Site (5.2 Ha)	Two woods. One is semi-natural broad-leaved Fraxinus - Acer - Mercurialis woodland, and the other a plantation woodland of hybrid poplars and conifers	Lies within Area 3.

#### SSSI Buffer Zones

An area of the Site (north western edge of Area 1) is located within an area identified as a SSSI Buffer.





1 Geffery Close  
Landrake  
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Legend  
Survey area

Title: Map 1. Location map  
  
Project: Area's 1-3 - Legacy Farm  
Solar Project  
  
Checked by: CDH      Version: 01  
Date: 19 July 2022





Native hedgerows - mitigation is recommended for any hedgerow removal and to protect retained hedgerows during the construction phase.

Running water - a Construction Environmental Management Plan (CEMP) is recommended to prevent damage to freshwater habitats during construction

Badgers, Brown Hare & Hedgehog - simple mitigation is recommended to prevent animals becoming trapped within the Site and to maintain dispersal across the site

Reptiles - sympathetic clearance is recommended for any works in habitats with reptile potential, such as hedgerows, scrub and rough grassland

Johnstone Newt Sites SAC - part of the Site lies within a 300m SSSI buffer. There is a requirement for the planning authority to consult NRW.

Dormice - mitigation is recommended to minimise the risk of any hedgerow removal, cable trenching and general construction works impacting Dormice

Great Crested Newt - the site provides potential to support GCN during the terrestrial, aquatic and hibernation phases. HSI & eDNA surveys should be undertaken of all waterbodies within 250m

**western**  
ECOLOGY

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#### Legend

- Target note
- Survey area
- Native hedgerow with trees
- Native species rich hedgerow
- Native hedgerow
- Species poor semi-improved grassland
- Semi-improved neutral grassland
- Tall ruderal
- Scrub
- Standing water
- Improved grassland

0 75 150 m

Title: Map 2. Phase 1 Habitat Survey

Project: Area 1 - Legacy Farm Solar Project

Checked by: CDH Version: 01  
Date: 25 July 2022



0 75 150 m





Great Crested Newt - the site provides potential to support GCN during the terrestrial, aquatic and hibernation phases. HSI & eDNA surveys should be undertaken of all waterbodies within 250m

Native hedgerows - mitigation is recommended for any hedgerow removal and to protect retained hedgerows during the construction phase.

Dormice - mitigation is recommended to minimise the risk of any hedgerow removal, cable trenching and general construction works impacting Dormice

Badgers, Brown Hare & Hedgehog - simple mitigation is recommended to prevent animals becoming trapped within the Site and to maintain dispersal across the site

Bats - if any mature trees associated with hedgerows, woodland or open fields are to be impacted, further inspection prior to works is recommended

Birds - breeding & wintering bird surveys should be completed to determine likely impact on farmland birds at this Site

Running water - a Construction Environmental Management Plan (CEMP) is recommended to prevent damage to freshwater habitats during construction

Semi-natural broadleaved woodland - all woodland habitat should be protected during construction by a suitable buffer zone

### Legend

- Survey area
- Native hedgerow with trees
- Native species rich hedgerow
- Native hedgerow
- Fence
- Ditch with water
- Running water
- Species poor semi-improved grassland
- Semi-improved neutral grassland
- Arable
- Tall ruderal
- Scrub
- Standing water
- Bare ground
- Semi-natural broadleaved woodland
- Improved grassland
- Scattered scrub

0 75 150 m

Title: Map 4. Phase 1 Habitat Survey

Project: Area 3 - Legacy Farm Solar Project

Checked by: CDH Version: 01  
Date: 20 July 2022

### 3.4. Potential for species of nature conservation importance

Habitats have been assessed from the results of the field survey for their potential to support protected species (Table 6). 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.

Table 6. Potential for species of nature conservation importance

Species	Assessment	Likely value
Amphibians	<p>There are a total of 85 records for Great Crested Newt within 1km of each of the Sites (76 records for Area 1, 6 records for Area 2 and 3 records for Area 3) There are also suitable ponds located within the Site.</p> <p>Great Crested Newt Habitat Suitability Index (HSI) has been calculated for the three ponds within the Site, based on ARG UK Advice Note 5 and assessed from the field visit. HSI scores are as follows:</p> <p><u>Area 1</u> P1 = 0.71 – good suitability</p> <p><u>Area 2</u> P1 = 0.70 – good suitability P2 = 0.68 – average suitability P3 = 0.48 – poor suitability</p> <p><u>Area 3</u> P1 = 0.61 – average suitability P2 = 0.63 – average suitability P3 = 0.67 – average suitability</p> <p>The majority of the terrestrial habitat within the site (such as arable and short sward grassland) is of very limited suitability for GCN. However, the hedgerows, scrub, and woodland located within and around the site provide some opportunities for foraging and shelter. These habitats also provide functional connectivity across the site and to the wider area beyond the development footprint.</p> <p>There is potential for GCN and other common amphibians to be present within the terrestrial and aquatic habitats associated with the Site.</p>	Potential to be present. Value unknown
Badgers	<p>There are a total of 9 records for Badger within 1km of the Sites.</p> <p>No Badger setts or specific evidence of activity (such as latrines) were recorded within the Site, however given the size of each site and the prevalence of suitable habitat it is possible that active setts are present, particularly within woodland areas. Numerous well-worn mammal pathways were also recorded across the wider Site. Taking into the size of the sites, the suitable habitat present within the boundaries and the local area, it is highly likely Badgers are active within the Site.</p>	Likely
Bats	<p>Individual mature trees associated with hedgerow boundaries, woodland areas and open fields provide potential for roosting bats.</p> <p>The intensive agricultural habitats contained within the Site provide very little value for foraging and commuting bats. Semi-natural habitats such as scrub, woodland, watercourses and hedgerows are</p>	<p>Unknown</p> <p>Moderate</p>

	likely to provide some opportunities for foraging and commuting and it is likely a variety of bat species utilise these areas, particularly at the margins of the sites.	
Birds	Given the extent of the sites and their agricultural management, the sites are likely to support assemblages of farmland birds for breeding and winter foraging. Hedgerows and boundary habitats are also likely to provide suitable nesting habitat for widespread and common species.	Moderate
Brown Hare	There 4 records for Brown Hare located within 1km of both Area 1 & 2. Several individual animals were observed during the survey, and it is likely the arable and hedgerow habitats provide some foraging and sheltering opportunities.	Present
Common Dormice	There are no records for Dormice within 1km of the Site.  Suitable potential habitat within the Site occurs as hedgerows, scrub and woodland. Most of the hedgerows associated with Areas 1 & 3 are suboptimal due to close management and a generally low species/age diversity of fruiting shrubs, however linkage to woodland habitat within and adjacent to the Site provides potential for foraging and dispersal. The hedgerows in Area 2 are more sympathetically managed and generally provide better suitability. There is potential for Dormice to be active within the Site.	Moderate
Hedgehog	There are a total of 3 records within 1km of the Site. The intensive agricultural habitats provide limited potential. Semi-natural habitats (such as hedgerows, scrub, woodland and rough grassland) are likely to provide foraging and commuting opportunities, while the Site also features connectivity to suitable off-site habitat such as woodland. Hedgehogs are likely to be active across the Site.	Moderate
Reptiles	There are 6 records for Grass Snake within 1km of Area 1.  The intensive agricultural habitats provide negligible potential for reptiles. Hedgerows, scrub and woodland that are associated with ditches and watercourses may provide some potential for species such as Grass Snake. The Site provides little potential for other species	Low
Otter	There is 1 record for Otter within 1km of the Area 3.  The stream habitat associated with the Site is unlikely to support regular Otter activity, such as breeding or resting sites due to limited size of the streams and a subsequent lack of suitable prey. It is unlikely that Otter are active within the Site.	Low
Water Vole	There is one record for Water Vole within 1km of each of the Sites.  The stream/ditch habitats associated with the Site mostly hold very limited water provide very limited suitability. Ditches which held water at the time of survey were very isolated from other suitable habitat in and provide sub-optimal habitat. It is unlikely Water Vole are present here.	Negligible
Notable invertebrates	The habitats associated with the Site provide limited potential for notable invertebrate species.	Negligible
Notable plants	Habitats within the Site provide little potential for notable or rare plants and they do not need to be considered further.	Negligible
Invasive non-native plants	Japanese Knotweed was recorded growing in a former pond basin in a grass ley field in Area 2. Japanese Knotweed is listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) as	Present

	invasive non-native with respect to England and Wales was present in one location at the site.	
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## 4. Evaluation of ecological features and potential impacts

### 4.1. Introduction

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.

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

#### 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.

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.

#### Notable habitats

Sixty five habitats are listed as being of principal importance, in the Secretary of State's opinion, for the purposes of conserving biodiversity. Under section 41 (England) of the NERC Act (2006) 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.

#### Native hedgerow

All of the native hedgerow habitat associated with the Site qualifies as a Habitat of Principal Importance and as a Local Biodiversity Action Plan Priority (Wrexham Biodiversity Action Plan, 2015).

The proposed development is not anticipated to result in the removal of any hedgerows, as the solar arrays and associated infrastructure will occupy internal areas of field compartments. However, the proposed development may result in removal of short sections of hedgerow (<5m) to widen existing access ways, while construction activities have potential to impact hedgerows through accidental damage (such as pollution and root damage). Mitigation is therefore recommended to address these minor impacts.

### Semi-natural broadleaved woodland

All of the woodland habitat contained within the Site is likely to qualify as both a Habitat of Principal Importance and as a Local Biodiversity Action Plan Priority (Wrexham Biodiversity Action Plan, 2015). It is unlikely that the proposed development will result in loss of extent of any woodland habitat, however construction activities have potential to cause accidental damage. Mitigation is therefore recommended. If this changes and woodland will be lost, additional mitigation would be recommended.

### Running water - streams

The riparian habitats are unlikely to qualify as a Habitat of Principal Importance (JNCC & Defra, 2012) or as Local Biodiversity Action Plan priority habitat (Wrexham Biodiversity Action Plan, 2015), however represent sensitive habitats with connectivity to off-site habitats. The streams will not be directly impacted by the proposals and will continue to function ecologically, however, construction activities, have potential to impact the stream habitat through pollution. Precautionary mitigation is therefore recommended.

## 4.3. Species of nature conservation importance

### 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.

One thousand, one hundred and fifty species of fungi, plant or animal are listed as being of principal importance, in the Secretary of State's opinion, for the purposes of conserving biodiversity. Under section 41 (England) of the NERC Act (2006) 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.

### Amphibians

The four native widespread amphibians (Common Frog, Common Toad, Common Newt and Palmate Newt) are given limited protection from trade under the Wildlife and Countryside Act 1981 (as amended).

Great Crested Newt and Natterjack Toad and their breeding sites and resting places (during all parts of their lifecycle) are fully 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 Great Crested Newts and Natterjack Toads (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);
- possess, sell, control or transport live or dead newts, or parts of them;
- take Great Crested Newt or Natterjack Toad eggs.



The very rare Pool Frog, only recently recognised as a native amphibian, is fully protected under the Wildlife and Countryside Act 1981 (as amended) from killing, injury, trade and disturbance, whilst their habitats are also protected.

Great Crested Newt, Natterjack Toad, Common Toad and Pool Frog are listed as species 'of principal importance for the purpose of conserving biodiversity'.

The ponds located within the Site provide potential to support breeding GCN. There are also a number of ponds located within 250m that have an unknown potential to support breeding GCN populations. If GCN are present in ponds within the Site or within 250m of the Site, there is potential for GCN to occupy/use suitable terrestrial habitat contained within the Site.

Suitable terrestrial habitat across the Site consists of hedgerows, ditches, scrub, woodland and areas of rough grassland, while the arable and managed grassland habitats provide suboptimal habitat due to lack of sheltering and foraging opportunities.

The proposed development would be unlikely to result in the loss of any of the existing terrestrial habitats, as these are mostly located at field boundaries. The proposed development also offers potential for enhancement of the Site for GCN through the increased extent of habitats such as rough grassland, which would be created underneath the solar arrays.

However, construction activities have potential to result in the capture, killing, injury or disturbance of a Great Crested Newt, and the loss/damage of resting places, which would be deemed an offence. Mitigation is therefore required if Great Crested Newt are present within ponds within the Site or within 250m of this Site.

It is also likely that occasional common and widespread amphibians are associated with ponds and field boundaries. These areas should be protected during the construction and operational phases.

### Badgers

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.

No Badger setts were recorded within the Site, however it is likely that Badgers are active across all three areas given the rural setting and proximity to suitable habitat in the local area.

Construction activities and operation of the proposed development also have potential to harm individual Badgers and restrict movement across the Site. Precautionary mitigation is therefore recommended to address these potential impacts.

### Bats

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.

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

### Roosting

Individual mature trees associated with the hedgerows, woodland and open fields, have an unknown potential to support roosting bats. If any of these mature trees are likely to be impacted by the proposals, mitigation may be required.

### Foraging and commuting

The intensive agricultural habitats which account for the majority of the Site provides poor foraging habitat due to a lack of supported insect prey. Semi-natural habitats associated with the Site (such as scrub, hedgerows, streams and woodland) which are mainly present at the field boundaries are likely to provide some foraging and commuting opportunities. There are records for a variety of bats in the local area, including light-averse species (such as Horseshoes, Long-eared & Myotis) and it is likely that they are active around the Site margins.

There is currently little evidence to suggest either way whether solar farms can impact bat populations through land use changes such as habitat loss, fragmentation or barrier effect (Harrison *et al.* 2017; Taylor *et al.* 2019). However, the loss of very low value intensive agricultural habitats to this development is considered to be unlikely to impact local bat populations. The site will not be lit at night, whilst changes in land management are likely to improve retained habitats for bats. No mitigation for foraging and commuting bats is recommended.

### Birds

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.

Fifty-nine species of bird are listed as species “of principal importance for the purpose of conserving biodiversity”.

#### Breeding habitat

It is likely that common birds nest within habitats along the Site boundaries (such as hedgerows, scrub and woodland). The arable farmland associated with the Site also provides some potential for notable ground nesting species such as Skylarks.

The operation of the proposed development has potential to reduce availability of nesting habitat for ground nesting species, which may impact local populations. Any clearance of boundary habitats (such as hedgerows), although unlikely to impact local bird populations, has potential to harm individual birds nests. Mitigation is therefore recommended.

#### Winter foraging

Some of the arable and grassland fields within the Sites feature open and flat aspects which provides some potential for winter foraging by farmland birds such as Lapwing. The proposed development would result in a reduction in the suitability of these areas. Mitigation is therefore recommended.

#### Brown Hare

Brown Hare are protected by a closed season for hunting under the Wildlife and Countryside Act 1981 (as amended). They are listed as species “of principal importance for the purpose of conserving biodiversity”.

Brown Hare are active across the Site. It is likely that changes in habitat management associated with the proposed solar PV farm (grassland creation under arrays) would benefit Brown Hare, however security fences associated with the proposed development have potential to restrict movement through the Site. Precautionary mitigation is therefore recommended.

#### Hedgehog

Hedgehogs are partially protected under the Wildlife & Countryside Act and may not be trapped without a licence from Natural England. Hedgehogs are listed as a species “of principal importance for the purpose of conserving biodiversity”.

There is potential that Hedgehogs are active within semi-natural habitats contained within the Site. The proposed development has potential to fragment foraging habitat and create a barrier to dispersal across the Site. Precautionary mitigation is therefore recommended.

#### Hazel Dormice

Hazel (or Common) Dormice, and their breeding sites and resting places, are protected under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010. 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.

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

This development is considered to be of low impact to Dormice. There is some potential for Dormice to be present within hedgerow habitats at this Site, particularly the hedgerow boundaries and woodland in Area 2. The proposed development is unlikely to impact local populations (if present), as there will be no significant loss of hedgerow habitat (although some small sections may require removal to widen existing access points).

The removal of any small sections of hedgerow has potential to cause harm or disturbance to these animals, while general construction activities also have potential to cause additional disturbance. Mitigation for vegetation clearance and general construction activities is therefore recommended.

### Reptiles

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.

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

All six native reptiles are listed as species “of principal importance for the purpose of conserving biodiversity”.

There is some low potential for common reptiles such as Grass Snake to be active around ditch, hedgerow, woodland and scrub/rough grassland habitat that are associated with the Site.

As these semi-natural habitats are generally in existence at the margins of the Site, it is considered unlikely that they would be lost to the development, which will occupy the open field compartments. The loss of agricultural habitats to the development is therefore unlikely to impact local reptile populations.

However, site clearance or construction activities could result in the killing or injury of individuals which may be deemed an offence under the Wildlife and Countryside Act 1981 (as amended). If clearance activities are to impact any hedgerows, ditches or rough vegetation, mitigation would be required.

## 4.4. Invasive Non-native Species

Invasive non-native plant species are listed on Schedule 9 of the Wildlife & Countryside Act and it is an offence to spread or to cause the spread of these species in the wild.

Japanese Knotweed is growing within a limited area of a grass field, located in the north-east of Area 2 (as detailed in Map 3). Mitigation is therefore recommended

#### 4.5. Statutory Nature Conservation Sites

Johnstone Newt Sites SAC/ Stryt Las a'r Hafod SSSI both relate to the same area, which is located ~200m to the west (at the closest point). The north-western edge of Area 1 is located within an area identified as a SSSI 300m Buffer and impacts on this SSSI should be considered. Mitigation may be required.

#### 4.6. Non-statutory Nature Conservation Sites

There are 2 NNCS located within Area 2 & 1 NNCS in Area 3, all of which relate to the woodland habitat associated with the Site. The proposals will not result in any loss of this habitat, however there is potential for construction activities to cause accidental damage to this habitat through impacts such as pollution. Mitigation is therefore recommended.

The Site features sufficient separation distances from all other NNCS located within 1km and no adverse impacts to these sites are predicted. No mitigation is required in respect to these sites.

## 5. Recommendations for mitigation and further surveys

### 5.1. Mitigation

Where there is potential that the proposed development will have a significant<sup>13</sup> effect on a valued ecological feature of nature conservation interest, recommendations for mitigation are made based on the mitigation hierarchy suggested 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.

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

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.

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

#### Native hedgerow

If the proposals result in any extent of hedgerow habitat being lost to the development, an equal extent of hedgerow should be replanted using a mix of native shrubs of local provenance.

Any cable routes should be installed under existing hedgerows, rather than removing sections of hedgerow. This will ensure that hedgerows maintain canopy connection and do not become fragmented.

All retained hedgerow should also be protected from accidental damage during the construction phase by a suitable buffer of at least 5 metres (see Section 5: Dormice). This buffer zone should be delineated by a suitable fence during the construction phase. This

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<sup>13</sup> 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).

protection zone should be maintained for the duration of the works, and there should be no access, storage of materials, ground disturbance, burning or contamination within the fenced off areas.

#### Semi-natural broadleaved woodland

It is unlikely that the proposals will result in the loss of any woodland habitat. All retained woodland habitat should be protected from accidental damage during the construction phase by a suitable buffer zone informed by the arboricultural survey. This protection zone should be delineated by a suitable fence and maintained for the duration of the works, and there should be no access, storage of materials, ground disturbance, burning or contamination within the fenced areas. These buffers should be retained undeveloped for the operational period of the development.

#### Running water: streams

The stream habitats should be protected from construction activities through the implementation of a Construction and Environmental Management Plan (CEMP).

Mitigation for the potential adverse effects from construction practices should include:

- Implementation of a 5m buffer zone between any construction activities and the outer edge of stream habitat, delineated by appropriate fencing, with no access, storage of materials, ground disturbance, burning or contamination within the fenced off areas.
- Ensure there is no contamination of soil or water by hazardous substances, with particular attention paid to the boundaries adjacent to the stream or reedbed habitats, and potential run-off down slope;
- Ensure there is no sediment is deposited outside the Site, including the reduction of dust deposition, in particular in relation to the presence of site vehicles;
- No works should be undertaken outside of the approved footprint;
- Ensure that work occurs only during daylight hours;
- Undertake appropriate storage and transport of any hazardous materials, including vehicle fuel, or any waste materials;
- Ensure there are no spills, or leaks of fluids, fuels or oils from vehicles or plant, in particular in relation to the identified water courses within the Site;
- Ensure vehicles and plant are parked an appropriate distance from sensitive environmental areas when not in use.

### 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:

#### Amphibians

There is potential for Great Crested Newt to be utilise aquatic and terrestrial habitats associated with the Site. Presence/absence surveys (including HSI assessments) should be completed of all accessible waterbodies within 250m of the Site. Results of these surveys will inform any mitigation that may be required.

### Badgers, Brown Hare & Hedgehog

There is potential that mammals such as Badgers, Brown Hare & Hedgehogs may become trapped within site during the construction and operation phases. To prevent this, the following is recommended:

- Site fencing along the boundaries should leave a gap of at least 5 metres wide between the fence and any woodland, hedgerow or fence boundary;
- Any trenches left open at night should have some means of escape for mammals, such as the placement of a scaffolding board at one end;
- Any security fences should have a gap at each corner sufficient to allow mammals to exit the Site should they gain entry.

There is also potential for security fencing associated with the completed development to restrict movement across the Site. To prevent this from happening, all permanent fencing should be fitted with suitable gates to allow Badgers and other mammals to continue to use the Site during the operational phase.

### Bats

#### Roosting

Individual mature trees associated with hedgerow/woodland habitats and open fields, provide an unknown potential for roosting bats.

Once design details are known they should be assessed to determine if any of these trees are likely to be impacted by the proposed development. If they are likely to be impacted, an inspection of the trees/building by a suitably qualified and licensed ecologist will be required prior to the commencement of works. If any evidence of bats is found, further surveys may be required.

### Birds

#### Breeding habitat

Hedgerow, scrub and tree habitats may support widespread and common nesting bird species, while arable habitats may support notable ground nesting species.

Breeding bird surveys should be completed to allow an informed assessment of likely impact to breeding bird populations at this Site.

#### Wintering habitat

Open arable/grassland field compartments provide some suitability for winter foraging by notable farmland birds. Winter bird surveys are recommended to inform a robust assessment of impact on birds of open habitats.

### Hazel Dormice

Mitigation is required to minimise the risk of any hedgerow removal, cable trenching and general construction works impacting Dormice.

#### Removal of short sections of Hedgerow



If there is to be any removal of small sections of hedgerow (such as gateway widening), clearance works need to be sensitively timed to minimise the risk of potentially harming Dormice. Works should be carried out under the following precautions:

- All activities affecting potential Dormice habitat will require a watching brief by a suitably qualified ecologist, including a fingertip search of habitat to be cleared prior to and during works.
- All clearance works should be undertaken using hand tools only.
- Hedgerow/hedgebank habitat should be removed in its entirety during October, when Dormice are still active but no longer breeding, while also avoiding the bird nesting season. Or;
- Reducing above ground vegetation to 300mm between the period October and April inclusive and then removing stumps and or hedgebank during the following April/May. This will allow any potential dormouse to come out of hibernation and disperse into retained habitat.
- No vegetation clearance to take place between June to September when females have dependant young.

Any cable routes that need to pass through any of the hedgerows will need to be trenched underneath the existing hedgebank. This may require hand digging to avoid roots of large shrubs or trees. Works should be completed during the period April to October to avoid the dormouse hibernation period.

At least an equal extent of any hedgerow habitat lost will need to be rebuilt/replanted, as per Section 5: hedgerow. Any newly created hedgerow habitat should connect to existing hedgerows.

#### Retained hedgerows

All retained hedgerow habitat should be protected from construction activities by a 5 metre wildlife buffer zone, measured from the edge of hedgerows canopy. The buffer zone should be delineated by suitable fencing, and no construction activities should take place within this buffer zone. All site contractors should be briefed on the purpose of the buffer zone. This will ensure that it is unlikely that any Dormice present within these habitats would be disturbed in a way that could be considered an offence during the construction phase.

#### Reptiles

There is some potential for common reptiles to be present in association with grassland, scrub and hedgerow habitat at the margins of the Site. Further survey work is not considered appropriate or proportionate, due to the temporary and limited impacts of the proposed development in and the potential to retain these animals within improved habitats within the site. This is preferable to translocation as it reduces stress, prevents the spread of disease and supports natural population dynamics.

There is also high potential for Reasonable Avoidance Measures (RAMs) to successfully ensure that no reptiles are killed or injured during development. By following simple mitigation, any adverse impact can be avoided.

RAMs should be undertaken during vegetation clearance at the margins. A Method statement for sensitive clearance of habitats is as follows:

#### Clearance in period late March to October

If scrub/grassland/hedgerow clearance is to occur during the active reptile season (late March to October) areas to be affected by construction activities, should first be checked for the presence of any active birds' nests, by a suitably qualified person. Areas which do not support any active birds should then be de-vegetated prior to any site activities under the supervision of a suitably qualified ecologist.

Vegetation should initially be cut to a height of no more than 10cm and work in a direction towards retained habitat. This will encourage any reptiles to disperse naturally. After at least 48hrs, a second cut will be made as close to ground level as possible. This should ensure that any reptiles, if present, are displaced from the construction site. Once cleared, vegetation within the works area should be maintained below 10cm for the duration of the works to prevent attracting reptiles back into the area.

#### Construction during the period November to mid-March:

Clearance of areas that may provide hibernacula (such as logs, wood piles, debris piles) should be avoided during these periods as there is unknown potential for hibernating reptiles to be present. If this is planned but unavoidable, it is recommended that surrounding vegetation is cut back to bank level during September and October and kept close-managed to deter hibernating reptiles.

If hibernacula removal is unavoidable and required during winter months, it should be completed under the direct guidance of a suitably experienced ecologist and in moderate weather conditions.

## 5.4. Invasive Non-native Species

Japanese Knotweed is growing within a field located in the north-east of Area 2. A Japanese Knotweed management plan should be developed which should manage risks involved with the construction and operational phases of the development and include a scheme of treatment which would need to be informed by a survey mapping its precise extent.

## 5.5. Statutory Nature Conservation Sites

The north-western edge of Area 1 is within a 300m SSSI Buffer zone for the Johnstone Newt Sites SAC/ Stryt Las a'r Hafod SSSI. The Site features sufficient separation distance from these designations (~200m and separated by the A483 highway), while also lacking direct connectivity and it is unlikely that the proposed development would result in direct impacts to the GCN population for which this site is designated. However there is a requirement for the planning authority consult Natural Resources Wales.

## 5.6. Non-statutory nature conservation sites

There is potential for construction activities to adversely impact habitats and species associated with the 3 NNCS located within Areas 2 & 3 through accidental damage such as pollution. These potential impacts should be mitigated through the implementation of the CEMP, as already detailed in Section 5.2, however it should be expanded to also include a specific focus on protecting habitats within the woodland areas associated with Yorke's Dingle & Well Wood, Oak Wood and Hopyard Wood Wildlife Sites. This should include the following additional measures:

- No unauthorised works should take place within the NNCS boundaries;
- No storage of materials within the NNCS boundaries;
- No vehicle movements within the NNCS boundaries;
- Appropriate signage installed along NNCS boundary informing contractors of the environmentally sensitive areas;

## 6. Further survey work

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.

However, it is recommended that the following species/group specific surveys are completed to ensure compliance with wildlife legislation and relevant planning policy:

### Great Crested Newt

Habitat suitability index (HSI) should be calculation for all accessible waterbodies within 250 metres (as per ARG UK Advice Note 5). For waterbodies that are judged suitable, Environmental DNA (eDNA) surveys should be completed.

### Bats

#### Roosting

If mature trees are to be impacted, they should be assessed for their potential to support roosting bats in line with Collins *et al*, 2016. This may include inspection from height and emergence surveys in the bat active period.

### Birds

#### Breeding bird surveys

Breeding bird surveys should be undertaken to identify the use of the site by breeding birds. This should comprise a suitably experienced surveyor walking a predetermined transect and recording all birds seen or heard onto pre-printed maps using BTO codes and symbols to describe species present and associated activity. Three early morning visits should be completed between April to June.

#### Wintering bird surveys

Wintering farmland bird surveys should be completed for the larger, more open fields in Area 2 & 3. This should comprise monthly transect surveys walked by an experienced ornithologist in the period November to March.

No other survey work is recommended for this site.

## 7. Biodiversity enhancement

Creating new habitats, enhancing existing habitats or providing new features, can all contribute towards biodiversity enhancement, and helping to rebuild habitat networks in the wider area improves ecological resilience and adaptation to climate change.

There is good potential to maximise the value of the completed development for wildlife through careful plantings and good design, with, for example, opportunities to: increase biodiversity through the planting of native species-rich hedgerows and extending woodland areas; setting aside areas for wildlife; and using soft landscape design that endeavours to create new habitats suitable for native species. Enhancements are additional to any measures necessary to deal with potential impacts on site, as they are an opportunity to provide new benefits for biodiversity as a consequence of the proposals being implemented.

Further surveys are required to fully characterise the Site for GCN, roosting bats (depending on impact) and breeding & wintering birds, as such, biodiversity enhancements will be recommended once these surveys have been undertaken.

It should be noted that a biodiversity net gain of 10% is likely to be required for this development. Biodiversity net gain calculations should be completed at the earliest practicable stage in the development to avoid significant re-design costs in the latter stages of the planning process.

## 8. References

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## 9. Appendix 1:

### Legislation and Policy used to assess habitats and species:

#### 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.

#### 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.

#### 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.

#### 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.

#### 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.

### 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.

### The Hedgerow Regulations 1997

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

### 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.

### 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.

### Natural Environment and Rural Communities Act 2006

The Act made amendments to 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.

### 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.

### National Planning Policy Framework, 2019

The National Planning Policy Framework sets out the Government's planning policies for England and how these are expected to be applied. It contains a number of policies relating to ecology including "minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures".

### 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.

#### [Biodiversity 2020](#)

This is a national strategy for England's wildlife and ecosystem services based on the White Paper.

## 10. Appendix 2:



Image 1. Improved grassland in Area 1



Image 2. Defunct hedgerows in Area 1



Image 3. Arable habitat in Area 2



Image 4. Improved grassland in Area 2



Image 5. Managed hedgerows in Area 2



Image 6. Semi-improved grassland and woodland in the background – Area 2





Image 7. Stream habitat in Area 2



Image 8. Woodland in Area 2



Image 9. Mown grassland in Area 2



Image 10. Japanese Knotweed in Area 2



Image 11. Improved grassland in Area 3

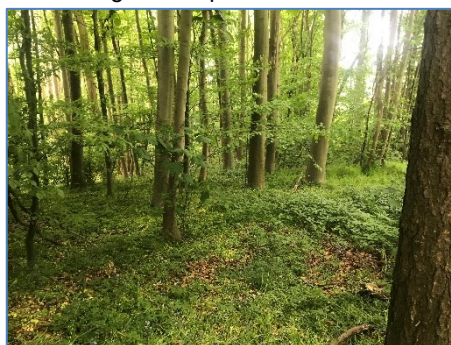


Image 12. Woodland in Area 3



Image 13. Stream habitat in Area 3

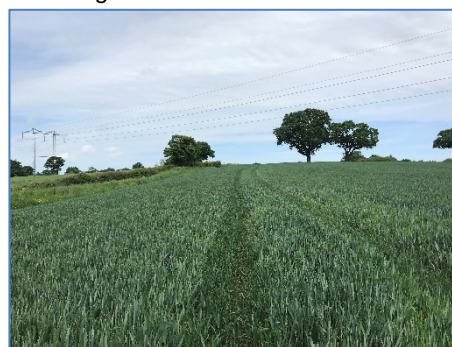


Image 14. Arable habitat in Area 3

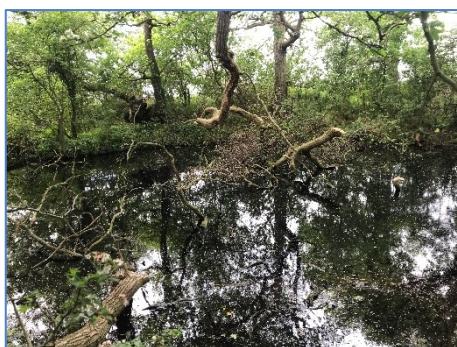


Image 15. Pond 3 in Area 3



Image 15. Access roads in Area 3

## 10. Appendix 3

Records for notable bird species within 1km of Areas 1-3 are detailed below.

Table 1. Records for notable bird species within 1km of Area 1

Common Name	No. of Records	Conservation Status	UK Protection
Barn Owl	1	LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, LBAP-T, LBAP-W, WBA	WCA1.1
Bittern	1	BAP, LBAP-A, LBAP-C, LBAP-G, S7, UKBA, WBA,	WCA1.1
Black-headed Gull	3	LBAP-G, S7, UKBA, WBR	
Bullfinch	2	BAP, LBAP-C, LBAP-D, LBAP-F, LBAP-G, S7, UKBA, WBR	
Coal Tit	3	LBAP-C, WBA	
Common Sandpiper	1	UKBA, WBA	
Cormorant	3	LBAP-C, LBAP-G, WBA	
Crossbill	1	LBAP-C	WCA1.1
Curlew	1	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7, UKBR, WBR	
Dipper	1	LBAP-C, LBAP-G, WBA	
Dunnock	6	BAP, LBAP-C, S7, UKBA	
Fieldfare	1	LBAP-C, UKBR, WBA	WCA1.1
Garden Warbler	1	LBAP-C, WBA	
Goldcrest	3	LBAP-C, WBA	
Green Woodpecker	2	LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, WBA	
Greenfinch	4	LBAP-C, UKBR	
Grey Wagtail	2	LBAP-C, LBAP-T, UKBA	
Herring Gull	6	BAP, LBAP-C, LBAP-G, S7, UKBR, WBR	
Hobby	1	LBAP-C, LBAP-G, WBA	WCA1.1
House Martin	3	LBAP-C, UKBR, WBA	
House Sparrow	4	BAP, LBAP-C, LBAP-F, LBAP-G, S7, UKBR, WBA	
Iceland Gull	2	UKBA	
Kingfisher	1	LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-T, WBA	WCA1.1
Lapwing	2	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7, UKBR, WBR	
Lesser Black-backed Gull	4	LBAP-C, LBAP-G, LBAP-S, UKBA, WBA	
Lesser Redpoll	1	BAP, LBAP-C, LBAP-D, S7, WBR	
Lesser Spotted Woodpecker	1	BAP, LBAP-C, LBAP-D, LBAP-F, LBAP-G, S7, UKBR, WBR	
Linnet	1	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, S7, UKBR, WBR	
Long-tailed Tit	7	WBA	
Mallard	3	LBAP-C, LBAP-G, UKBA, WBA	
Marsh Tit	1	BAP, LBAP-C, LBAP-D, LBAP-F, LBAP-G, S7, UKBR, WBR	



Mistle Thrush	4	UKBR	
Moorhen	2	UKBA	
Mute Swan	1	LBAP-C, WBA	
Peregrine	1	LBAP-A, LBAP-C, LBAP-G	WCA1.1
Pied Flycatcher	1	LBAP-C, LBAP-G, LBAP-S, S7, UKBA, WBR	
Pochard	1	LBAP-C, UKBR, WBR	
Red Kite	2	LBAP-C, LBAP-G, WBA	WCA1.1
Redstart	1	LBAP-C, LBAP-G, LBAP-S, UKBA, WBA	
Redwing	2	LBAP-C, UKBA, WBA	WCA1.1
Reed Bunting	2	BAP, LBAP-C, LBAP-D, LBAP-F, LBAP-G, S7, UKBA, WBA	
Rook	2	UKBA	
Skylark	1	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7, UKBR, WBA	
Snipe	1	LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, UKBA, WBA	
Song Thrush	7	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, LBAP-W, S7, UKBA, WBA	
Sparrowhawk	3	LBAP-C, UKBA	
Spotted Flycatcher	1	BAP, LBAP-C, LBAP-D, LBAP-F, LBAP-G, S7, UKBR, WBR	
Starling	4	BAP, LBAP-C, LBAP-F, LBAP-G, S7, UKBR, WBR	
Swallow	4	LBAP-A, LBAP-C, LBAP-G, WBA	
Swift	3	UKBR, WBA	
Tree Sparrow	1	BAP, LBAP-C, LBAP-F, LBAP-G, S7, UKBR, WBR	
Tufted Duck	1	LBAP-C, WBA	
Whitethroat	3	LBAP-C, UKBA, WBA	
Willow Tit	1	BAP, LBAP-C, LBAP-D, LBAP-F, LBAP-G, S7, UKBR, WBR	
Willow Warbler	3	LBAP-C, UKBA, WBR	
Woodcock	1	LBAP-C, LBAP-D, LBAP-F, LBAP-G, UKBR, WBA	
Wren	6	BAP, UKBA	
Yellowhammer	4	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7, UKBR, WBR	

Table 2. Records for notable bird species within 1km of Area 2.

Common Name	No. of Records	Conservation Status	UK Protection
Barn Owl	4	LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, LBAP-T, LBAP-W, WBA <sup>14</sup>	WCA1.1 <sup>15</sup>
Bullfinch	2	BAP, LBAP-C, LBAP-D, LBAP-F, LBAP-G, S7, UKBA <sup>16</sup> , WBR <sup>17</sup>	
Coal Tit	3	LBAP-C, WBA	
Curlew	1	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7, UKBR <sup>18</sup> , WBR	

<sup>14</sup> WBA - RSPB/BTO Birds of Conservation Concern in Wales - Amber list (not based on IUCN criteria)

<sup>15</sup> Wildlife and Countryside Act (1981) Schedule 1: birds which are protected by special penalties at all times.

<sup>16</sup> UKBA - RSPB/BTO Birds of Conservation Concern - Amber list (not based on IUCN criteria)

<sup>17</sup> WBR - RSPB/BTO Birds of Conservation Concern in Wales - Red list (not based on IUCN criteria)

<sup>18</sup> UKBR - RSPB/BTO Birds of Conservation Concern - Red list (not based on IUCN criteria)

Dunnock	4	BAP, LBAP-C, S7, UKBA	
Fieldfare	1	LBAP-C, UKBR, WBA	WCA1.1
Goldcrest	2	LBAP-C, WBA	
Green Woodpecker	1	LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, WBA	
Greenfinch	2	LBAP-C, UKBR	
Herring Gull	2	BAP, LBAP-C, LBAP-G, S7, UKBR, WBR	
Hobby	1	LBAP-C, LBAP-G, WBA	WCA1.1
House Martin	2	LBAP-C, UKBR, WBA	
House Sparrow	5	BAP, LBAP-C, LBAP-F, LBAP-G, S7, UKBR, WBA	
Lapwing	3	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7, UKBR, WBR	
Lesser Black-backed Gull	1	LBAP-C, LBAP-G, LBAP-S, UKBA, WBA	
Linnet	2	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, S7, UKBR, WBR	
Long-tailed Tit	5	WBA	
Mallard	2	LBAP-C, LBAP-G, UKBA, WBA	
Marsh Tit	3	BAP, LBAP-C, LBAP-D, LBAP-F, LBAP-G, S7, UKBR, WBR	
Meadow Pipit	1	LBAP-C, UKBA, WBA	
Mistle Thrush	3	UKBR	
Moorhen	1	UKBA	
Redstart	1	LBAP-C, LBAP-G, LBAP-S, UKBA, WBA	
Redwing	1	LBAP-C, UKBA, WBA	WCA1.1
Rook	4	UKBA	
Skylark	2	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7, UKBR, WBA	
Song Thrush	3	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, LBAP-W, S7, UKBA, WBA	
Spotted Flycatcher	2	BAP, LBAP-C, LBAP-D, LBAP-F, LBAP-G, S7, UKBR, WBR	
Starling	4	BAP, LBAP-C, LBAP-F, LBAP-G, S7, UKBR, WBR	
Swallow	5	LBAP-A, LBAP-C, LBAP-G, WBA	
Swift	1	UKBR, WBA	
Tufted Duck	1	LBAP-C, WBA	
Whitethroat	1	LBAP-C, UKBA, WBA	
Willow Warbler	1	LBAP-C, UKBA, WBR	
Woodcock	1	LBAP-C, LBAP-D, LBAP-F, LBAP-G, UKBR, WBA	
Wren	5	BAP, UKBA	
Yellowhammer	1	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7, UKBR, WBR	

Table 3. Records for notable bird species within 1km of Area 3

Common Name	No. of Records	Conservation Status	UK Protection
Barn Owl	4	LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, LBAP-T, LBAP-W, WBA	WCA1.1
Coal Tit	2	LBAP-C, WBA	

Curlew	2	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7, UKBR, WBR	
Dunnoch	3	BAP, LBAP-C, S7, UKBA	
Fieldfare	1	LBAP-C, UKBR, WBA	WCA1.1
Greenfinch	2	LBAP-C, UKBR	
Grey Wagtail	1	LBAP-C, LBAP-T, UKBA	
Hobby	2	LBAP-C, LBAP-G, WBA	WCA1.1
House Martin	1	LBAP-C, UKBR, WBA	
House Sparrow	2	BAP, LBAP-C, LBAP-F, LBAP-G, S7, UKBR, WBA	
Lapwing	1	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7, UKBR, WBR	
Linnet	1	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, S7, UKBR, WBR	
Long-tailed Tit	3	WBA	
Meadow Pipit	1	LBAP-C, UKBA, WBA	
Moorhen	1	UKBA	
Redwing	1	LBAP-C, UKBA, WBA	WCA1.1
Rook	1	UKBA	
Song Thrush	2	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, LBAP-W, S7, UKBA, WBA	
Spotted Flycatcher	2	BAP, LBAP-C, LBAP-D, LBAP-F, LBAP-G, S7, UKBR, WBR	
Starling	2	BAP, LBAP-C, LBAP-F, LBAP-G, S7, UKBR, WBR	
Swallow	3	LBAP-A, LBAP-C, LBAP-G, WBA	
Swift	1	UKBR, WBA	
Tawny Owl	2	LBAP-C, UKBA	
Whitethroat	1	LBAP-C, UKBA, WBA	
Woodcock	1	LBAP-C, LBAP-D, LBAP-F, LBAP-G, UKBR, WBA	
Wren	3	BAP, UKBA	
Yellowhammer	1	BAP, LBAP-A, LBAP-C, LBAP-D, LBAP-F, LBAP-G, LBAP-S, S7, UKBR, WBR	