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Land South of Furzehill Green

Preliminary Ecological Appraisal

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Client	Ecological Land Co-operative
Project	Land South of Furzehill Green, Preliminary Ecological Appraisal
Draft version/final	DRAFT
File reference	P19-944 Land South of Furzehill Green - Preliminary Ecological Appraisal

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Issued to client	Caroline O'Rourke	Senior Ecologist	17 February 2020

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1 Summary

1.1 BSG Ecology was commissioned to complete a preliminary ecological appraisal to inform a One Planet Development (OPD) planning application for land south of Furzehill Green, Ilston, Swansea (the Site).

1.2 The proposals include the construction of two small zero-carbon residential dwellings and a shared barn in the north-western field, and a change of use of the remainder of the site from improved pasture to arable farming. There is currently no plan to remove any bordering hedgerows or trees.

1.3 BSG Ecology was commissioned to carry out an extended Phase 1 habitat survey of the Site. The purpose of the survey was to determine whether there are likely to be effects on protected species or habitats as a result of the proposed development.

1.4 The Site is located within the Gower Area of Outstanding Natural Beauty (AONB) and comprises four fields. Three are currently unmanaged improved grassland (having been under agricultural management until recently) and the fourth (south-western) is currently used for growing vegetables to supply a local box delivery scheme by Cae Tan. The fields are bordered by a network of species-poor native hedgerows.

1.5 With the exception of the hedgerows (which represent priority habitat[1], albeit currently in poor condition) the habitats on Site are of low ecological value and do not represent any constraint to the proposals.

1.6 The proposals are unlikely to result in any impacts on statutory or non-statutory sites of conservation interest.

1.7 Evidence of badger (an old sett, guard hair and commuting path) was found during the Phase 1 habitat survey. No impacts on the sett are currently anticipated, however if this should change it is recommended that the sett is checked for badger activity by an experienced ecologist prior to any work which may cause damage or disturbance.

1.8 The habitats on Site have limited potential to support other protected species. However, the hedgerows represent priority habitat could provide habitat for breeding birds and dormouse, the buildings could provide shelter for hedgehog, and the south-facing hedgerow bases could have the potential to support low numbers of common species of reptile. One mature ash tree was identified as having low potential to support roosting bats. As all features with potential to support protected species will be retained, no further surveys are considered necessary.

1.9 The Site has good potential for ecological enhancements, further details of which are provided in the report.

[1] Including any Habitats of Principal Importance listed under Section 7 of the Environment (Wales) Act 2016

2 Introduction

Background to commission

2.1 The Ecological Land Co-operative intends to implement a system of sustainable community growing on land south of Furzehill Green, to the north of the village of Lunnon, Gower. The proposed development is for the construction of two small zero-carbon residential dwellings and a shared barn in the north-western field, and a change of use of the remainder of the site from improved grassland to arable farming.

2.2 BSG Ecology was commissioned by the Ecological Land Co-operative to carry out an extended Phase 1 habitat survey of the Site in order to determine the baseline ecological conditions at the Site and identify any ecological risks or opportunities associated with the proposals.

Site description

2.3 The 'Site' (defined by the red line boundary) is illustrated on **Figure 1**. It is located within the Gower AONB and it comprises four fields (17.82 Acres in area) centred on Ordnance Survey Grid Reference (OSGR) SS 54565 90429. Three are currently unmanaged improved grassland (having previously been under agricultural management); the fourth (south-western) field is currently used for growing vegetables for a local box delivery scheme by Cae Tan.

2.4 The Site is surrounded by arable land, and the northern and western aspects of the Site are bordered by minor roads. The village of Lunnon is situated 340 m to the south of the Site. The four fields are bordered by a network of hedgerows, with a number of hedgerow trees present along the southern border of the southern-most field. In the wider landscape, there are areas of broadleaved woodland (the nearest is 315 m to the southwest of the Site).

Aims of study

2.5 A Preliminary Ecological Appraisal (PEA) was required to inform a planning application for the change of use of the Site. The PEA builds on an initial site walkover undertaken by Owain Gabb (BSG Director) in April 2018.

2.6 The aim of the PEA was to:

- Determine, map and assess the ecological value of habitats within the Site[2].
- Assess the potential of the Site to support widely occurring protected species such as reptiles and badger.
- Assess the potential of the trees on the Site to support roosting bats.
- Identify any potential ecological constraints to the proposed work, and make recommendations as to whether any further survey work may be required.
- Identify areas with potential for ecological enhancement.

[2] Including any Habitats of Principal Importance listed under Section 7 of the Environment (Wales) Act 2016.

3 Methods

Desk Study

3.1 Data was requested from a number of sources, as detailed in **Table 1** below:

Data Source	Date Accessed / Received	Notes
Magic[3] (www.magic.defra.gov.uk)	Accessed: 05 February 2020	Statutory designated sites, Impact Risk Zones, priority habitats, European protected species records
South East Wales Biodiversity Records Centre (SEWBReC)	Received 08 January 2020	A search was made within 2 km of OSGR SS 54565 90429
Google maps (https://www.google.com/maps/)	Accessed 05 February 2020	A search was made for ponds within 500m of the site (Gov UK)

Field Survey

Walkover survey

3.2 An initial walkover survey was completed on 09 April 2018 by Owain Gabb. Weather conditions during the survey were dry, bright and calm.

3.3 The survey involved slowly walking the internal field boundaries and the minor roads on the western and northern edges of the site. Habitats and associated plant, bird and animal species were noted.

Phase 1 Habitat survey

3.4 An extended Phase 1 Habitat survey of the Site was carried out by Caroline O'Rourke on 27 January 2020. The survey was completed with reference to industry standard guidance for Phase 1 habitat survey (JNCC 2010), and involved identifying and mapping the habitats present on Site using standard codes, and making notes on dominant or characteristic flora.

3.5 The survey was 'extended' to include recording protected or otherwise notable species, and any habitats with the potential to support them.

3.6 Weather conditions during the survey were overcast dry and calm.

Limitations

3.7 The extended Phase 1 habitat survey was carried out in January 2020, a time of year when some plant species can be less evident. Since the purpose of the survey was to characterise habitats and ground truth previous survey work carried out within the optimal season in 2018, this is not considered to be a significant constraint as it was possible to effectively characterise the habitats within the Site. In addition the surveyor is a botanical specialist who has experience in the vegetative identification of plant species.

[3] Multi Agency Geographic Information for the Countryside (MAGIC)

Project personnel

3.8 Caroline O'Rourke is a Senior Ecologist at BSG Ecology and has worked in ecological consultancy since 2009. She is an accomplished botanist and holds a Level 4 Field Identification Skills Certificate (FISC) from the Botanical Society of Britain and Ireland. She has particular expertise in Phase 1 habitat and hedgerow survey, holds licences to survey dormouse *Muscardinus avellanarius* and great crested newt *Triturus cristatus* in England and Wales, and has considerable experience of a wide variety of protected species survey. Caroline undertook the extended Phase 1 habitat survey and technically reviewed this report.

3.9 Owain Gabb (BSG Director) has worked as a professional ecologist since 1999 and as an ecological consultant since 2003. He is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), and a Chartered Environmentalist. He has undertaken numerous ecological appraisals to inform changes in land use. Owain undertook the initial Site walkover survey and acted as technical director for the work.

3.10 Joanne Conway is an Ecologist at BSG Ecology and has over two years' experience carrying out ecological field surveys. She has a degree in Zoology and a Post Graduate Certificate in Ecological Survey Techniques from the University of Oxford. Joanne completed the desk study and is the author of this report.

4 Results

Protected Sites

Statutory designated sites

4.1 The Site does not lie within any statutory designated sites. There are a total of six Sites of Special Scientific Interest (SSSI) and two Special Areas for Conservation (SACs) located within 2 km of the Site. The details of these designations are listed in **Table 2**, with further details for the nearest / most relevant sites provided in 4.2 and 4.3 below.

4.2 The Site is approximately 260 m to the north-east of the Gower Ash Woods Special Area of Conservation (SAC) and Parkmill Woodlands and Llethrid Valley Site of Special Scientific Interest (SSSI) at its closest point, and is ecologically linked to these sites (which share a common boundary) via the hedgerow network.

4.3 Gower Ash Woods SAC is of European importance for its woodland habitats, supporting both *Tilio-Acerion* forests of slopes and ravines, and alluvial forest. Parkmill Woodlands and Llethrid Valley SSSI is notified for both geological and biological reasons (the latter relating to woodland). Caves within the SAC / SSSI woodland are known hibernation sites for greater and lesser horseshoe bats *Rhinolophus ferrumequinum* and *Rhinolophus hipposideros*. These hibernation sites are also used by whiskered *Myotis mystacinus* and Natterer's *Myotis nattereri* bats.

Table 2: Statutory designations within 2 km of the Site

Name of site	Designation type	Reason(s) for designation	Distance from Site (m)
Gower Ash Woods / Coedydd Ynn Gwyr	SAC	• *Tilio-Acerion* forests of slopes, screes and ravines for which this is considered to be one of the best areas in the United Kingdom. • Alluvial forests with alder *Alnus glutinosa* and ash (Alno-Padion, *Alnion incanae*, *Salicion albae*) for which the area is considered to support a significant presence	260
Coedydd Parkmill a Cwm Llethrid / Parkmill Woodlands and Llethrid Valley	SSSI	• Semi-natural broadleaved woodland, particularly its large continuous area of ash *Fraxinus excelsior* woodland on limestone.	260
Fairwood, Pengwern and Welshmoor Commons	SSSI	• Heathland and wet grassland communities with intermediate and transitional forms of importance in the European context occurring together with nationally and regionally important plant and invertebrate species, most notably the marsh fritillary butterfly	691

Name of site	Designation type	Reason(s) for designation	Distance from Site (m)
Gower Commons / Tiroedd Comin Gwyr	SAC	• Dry heaths, purple moorgrass *Molinia caerulea* meadows and wet heathland (supporting cross-leaved heath *Erica tetralix*) • Southern damselfly *Coenagrion mercuriale* and marsh fritillary butterfly.	691
Ilston Quarry	SSSI	• Geological interest - fine section through the Oxwich Head Limestone of the Carboniferous Limestone	752
Penard Valley	SSSI	• Diversity of habitats typical of the carboniferous limestones of Gower - rocky salt spray zone, shingle beach, saltmarsh, dunes, limestone grassland, ash-wych elm woodland and species rich fen.	1,278
Courthouse Grasslands	SSSI	• Marshy grassland and species-rich neutral grassland, with associated with areas of broadleaved woodland and scrub. • Nationally scarce marsh fritillary butterfly *Eurodryas aurinia*.	1,331
Rose Cottage, Llethrid	SSSI	• Important breeding roost of the lesser horseshoe bat	1,733

Non-statutory designated sites

4.4 The Site does not lie within any non-statutory designated sites.

4.5 SEWBReC returned records of nine non-statutory designated sites (all Sites of Importance for Nature Conservation (SINCs)) within a 2 km radius of the Site. The details of these designations are listed in **Table 3**.

4.6 **Table 3**: Non-statutory designations within 2 km of the Site.

Name of site	Reason(s) for SINC selection	Distance from Site (m)
Ilston	H1.3.2: Woodland containing an assemblage of Ancient Woodland indicator species H1.4.1: Structurally diverse and species-rich scrub H9.3.2: Species-rich Purple Moor-grass and Rush Pasture H12.1.2: Watercourse with exposure/erosion features	546

Name of site	Reason(s) for SINC selection	Distance from Site (m)
Ilston Cwm	H1.2.1: Ancient semi-natural woodland H1.3.2: Woodland containing an assemblage of Ancient Woodland indicator species H1.4.1: Structurally diverse and species-rich scrub H12.1.2: Watercourse with exposure/erosion features	1,050
Windmill Wood	H1.2.1: Ancient semi-natural woodland H1.3.2: Woodland containing an assemblage of Ancient Woodland indicator species H1.4.1: Structurally diverse and species-rich scrub H5.1.2: Relatively species-rich neutral grassland H9.3.1 Purple moor-grass and rush pasture H12.1.2: Watercourse with exposure/erosion features	1,119
Pennard Cliffs to Penmean Burrows	H1.3 (5): Native Wild: Lowland mixed deciduous woodland H1.4.1: Structurally diverse and species-rich scrub H1.4.2: Gorse stands H5.1.2: Relatively species-rich neutral grassland H6.1.1: Unimproved lowland calcareous grassland H7.1.2: Semi-improved lowland dry acid grassland H8.1.2: Unmodified lowland dry heath H12.1.2: Watercourse with exposure/erosion features H15.1: Maritime cliffs and slopes H15.2: Coastal sand dune H15.3: Coastal vegetated shingle H16.2: Species-rich bracken communities H17.2: *Sabellaria alveolata* reefs H18.1: Coastal saltmarsh H18.2: Intertidal mudflats H18.6: Sandy shore	1,364

Name of site	Reason(s) for SINC selection	Distance from Site (m)
Moorlakes Wood	H1.3.2: Woodland containing an assemblage of Ancient Woodland indicator species H1.4.1: Structurally diverse and species-rich scrub H9.3.2: Species-rich Purple Moor-grass and Rush Pasture H12.1.2: Watercourse with exposure/erosion features	1,646
Green Cwm and Park Woods	H1.2.1: Ancient semi-natural woodland	1,686
Fairwood Airport Heathland	H1.3.2: Woodland containing an assemblage of Ancient Woodland indicator species H1.4.1: Structurally diverse and species-rich scrub H5.1.2: Relatively species-rich neutral grassland H7.1.2: Semi-improved lowland dry acid grassland H8.1.2: Unmodified lowland dry heath H9.3.2: Species-rich Purple Moor-grass and Rush Pasture H16.2: Species-rich bracken communities	1,695
Forest Common and Plantation	H1.2.1: Ancient semi-natural woodland H1.3 (3): Native Wild: upland mixed ash woodland H1.4.1: Structurally diverse and species-rich scrub H1.4.2: Gorse stands H5.1.1: Lowland meadow H9.3.1 Purple moor-grass and rush pasture H12.1.2: Watercourse with exposure/erosion features	1,747
Highway Wood	H1.3.2: Woodland containing an assemblage of Ancient Woodland indicator species	1,995

Habitats

4.7 A Phase 1 Habitat map for the Site can be found in **Figure 1**. Target notes are shown on **Figure 1** and detailed in **Appendix 1**.

Improved grassland

4.8 This habitat occupies most of the Site (**Photographs 3** and **4**). It is heavily agriculturally improved, dominated by perennial ryegrass *Lolium perenne* with occasional annual meadow grass *Poa annua* and Yorkshire fog *Holcus lanatus*. The grassland is characteristically species-poor and contains a limited number of herbs tolerant of high nutrient conditions including occasional white clover

Trifolium repens, dandelion *Taraxacum officinale* agg., common mouse ear *Cerastium fontanum*, creeping buttercup *Ranunculus repens* and broad-leaved dock *Rumex obtusifolius*. This habitat is ubiquitous in the UK and is of negligible ecological value.

Native hedgerows

4.9 The Site consists of four fields, intersected by a network of native hedgerows (**Photographs 3** and **4**). At the time of survey, these were managed by flailing and were approximately 2.5-3 m high except for those in the south-eastern corner which were less intensively managed and 4-5 m high, with occasional semi-mature ash *Fraxinus excelsior* trees. Most of the hedges were intact but had small gaps at the base and/or short sections occupied by bramble and bracken with no hedgerow shrubs.

4.10 All the hedgerows are species-poor, consisting primarily of blackthorn *Prunus spinosa* and hazel *Corylus avellana* with varying amounts of hawthorn *Crataegus monogyna*, dog rose *Rosa canina* and elder *Sambucus nigra*. Ash and holly *Ilex aquifolium* are also present but rare. Ground flora is typically a mixture of scattered bracken *Pteridium aquilinum*, ivy, coarse grasses such as Yorkshire fog, cock's foot *Dactylis glomerata* and timothy grass *Phleum pratense* with occasional ruderal species including hogweed *Heracleum sphondylium*, common nettle *Urtica dioica*, broad-leaved dock and creeping buttercup. Elements of woodland ground flora are present in a few places, with occasional dog's mercury *Mercurialis perenne*, lords and ladies *Arum maculatum* and common male fern *Dryopteris filix-mas*. All native hedgerows are considered Section 7 priority habitat.

Arable

4.11 The south western field and a small section of the north-western field are currently used by Cae Tan for growing vegetables (**Photograph 5**). A small number of common arable weeds are present throughout including red deadnettle *Lamium purpureum*, groundsel *Senecio vulgaris* along with the ruderal species recorded elsewhere on the Site. The arable habitat does not conform to any Section 7 priority habitats.

Scrub

4.12 A small area of scrub (**Photograph 6**) is located adjacent to the hedgerow around the mature ash tree at **TN1** (**Photograph 1**). This consists of bramble, blackthorn and hazel and has grown up in a small fenced off area around the tree. Scrub is a common and widespread habitat throughout the UK and does not conform to any Section 7 priority habitats.

Buildings/structures

4.13 There are a small number of buildings/structures on the Site. These are a small, open-sided field shelter of wooden construction with a corrugated metal roof, a flat-roofed wooden shed of shiplap style construction, and a polytunnel used for growing vegetables.

Protected species

Amphibians

4.14 The data search returned no amphibian records from within the Site boundary.

4.15 No records were returned for great crested newt *Triturus cristatus* within 2 km of the Site. Twenty-six records were returned for three species of amphibian within 2 km of the Site: common toad *Bufo bufo*, common frog *Rana temporaria* and palmate newt *Lissotriton helveticus*.

4.16 There are two waterbodies located within 500 m of the Site boundary (410 and 480 m to the north-west); however there are no ponds or other features of likely value[4] on site. The Site provides no breeding potential for great crested newts.

[4] Features of value for amphibians include terrestrial habitat, hibernacula and connectivity to suitable habitat in the wider landscape.

Badger

4.17 The data search returned no records of badger *Meles meles* from within the Site boundary.

4.18 Fifteen badger records were returned from within 2 km of the Site. The nearest was a historical record of a badger sett (dated 1984) located 713 m to the southwest of the Site in woodland. Four records were of live sightings (all dated 2008); four records (which are the most recent records, dated between 2014 and 2016) were road casualties.

4.19 During the 2018 walkover survey an outlier badger sett was found at SS5457 9024, just outside the south-western Site boundary. It showed evidence of recent use; the entrance was clear of fallen leaves and other woody material. It was outside the stock fence of the south-eastern field, and the path from it lead away from the Site into poor semi-improved pasture outside the Site boundary (this area was not accessed). No other badger field signs (e.g. guard hairs, latrines or pathways) were recorded. However, a probable badger commuting route was found on the western boundary hedge at approximate OS Grid Reference SS5447 9042, and a track was evident on both sides of the minor road along the western Site boundary.

4.20 During the 2020 Phase 1 habitat survey, a probable old badger sett was found in the same location (see **TN2** on **Figure 1** and **Photograph 2**).The sett consisted of two holes, both of which had collapsed. A badger path and a guard hair were also found at TN3 (see **Figure 1**). No other field signs of badger were recorded.

Bats

4.21 No bat records were returned for the Site during the data search.

4.22 A total of 130 bat records were found within 2 km of the Site, 90 of which concern roosts. The nearest record is of a possible common pipistrelle *Pipistrellus pipistrellus* roost 471 m to the west of the Site at Willoxton Farm in 2003. Other records of note include:

- Three recent (post-2000) records for greater horseshoe bat roosts: at Llangrove Cave (situated within Gower Ash Woods SAC / Parkmill Woodlands and Llethrid Valley SSSI) between 2016 and 2017; two individuals roosting in an old storage shed in Moorlakes Wood (SINC) in 2011; and four individuals roosting under a roof alcove in a bunkhouse in Moorlakes Wood in 2012.
- Seven recent (post-2000) records for lesser horseshoe bat roosts: at Pengwern Farm in 2003 (two records); the barn at Llethryd Farm in 2005 (located within 100 m of Rose Cottage SSSI); Kilvrough Farm in 2010; Llangrove Cave between 2016 and 2017; and buildings in Moorlakes Wood between 2001 and 2012 (two records).
- Two records of brown long-eared bat *Plecotus auritus* roosts, one at Bryn Afel in 2008 and one in Llangrove cave in 2017.
- Two records of Natterer's bat roosts at Pengwern Farm in 2003.

4.23 During the Phase 1 habitat survey, the Site was assessed as having minimal potential to support roosting bats, as no suitable buildings or trees with potential roost features (PRF) such as cracks, rot holes or lifted bark are present. The improved fields are also likely to support an impoverished invertebrate fauna, so are very unlikely to represent an important foraging resource.

4.24 One ash tree at **TN1** (**Figure 1**) was assessed as having low potential to support roosting bats due to moderate ivy cover which could both act as a temporary roost for low numbers of bats or conceal other PRFs (although none were visible from ground level).

4.25 The minor roads on the western and northern Site boundaries are unlit and lined on both sides with hedgerows which connect to various areas of valley woodland within the Gower Ash Woods Special Area of Conservation (SAC) and Parkmill Woodlands and Llethrid Valley SSSI. It is likely that bats associated with these sites and with Rose Cottage, Llethrid SSSI, use the lanes for commuting and foraging. They are likely to provide more shelter than field boundaries within the

Site given their slightly lower altitude, are more botanically diverse, and are therefore likely to present better foraging resources. They may therefore be locally important for bat conservation in this context.

Breeding birds

4.26 A total of twelve bird records were returned for the Site itself during the data search. Of these, there were three different species of Schedule 1 bird (species afforded special protection whilst breeding). These were fieldfare *Turdus pilaris*, merlin *Falco columbarius* and redwing *Turdus ilacus*.

4.27 Sixty-two records of sixteen different species of Schedule 1 bird were obtained in the data search, within a 2 km radius of the Site. These species were: barn owl *Tyto alba*, kingfisher *Alcedo atthis*, peregrine falcon *Falco peregrinus*, red kite *Milvus milvus*, honey buzzard *Pernis apivorus*, goshawk *Accipiter gentilis*, Mediterranean gull *Larus melanocephalus*, chough *Pyrrhocorax pyrrhocorax*, green sandpiper *Tringa ochropus*, firecrest *Regulus ignicapilla*, Dartford warbler *Sylvia undata*, red-backed shrike *Lanius collurio*, brambling *Fringilla montifringilla*, merlin, redwing and fieldfare.

4.28 There is currently no potential for ground-nesting birds to occur in the site interior (due to a lack of suitable cover). The hedgerows provide suitable nesting and foraging habitat for a variety of small passerine species.

Hazel dormouse

4.29 No records of hazel dormouse *Muscardinus avellanarius* were returned for the Site.

4.30 The data search returned one record for hazel dormouse within 2 km of the Site, located 1,526 m to the west of the Site. Dormouse is also known to occur in some Gower woodlands, such as Gelli-hir Wood approximately 2.6 km to the north-east of the Site (Wildlife Trust of South and West Wales, 2020).

4.31 The hedgerows on Site are species poor and intensively managed; both factors which are known to reduce the suitability and value of hedgerow habitat for the species. However, there is some potential for dormouse to be present given the records in the wider area and the connectivity between the Site and woodland blocks in the surrounding landscape.

Other mammals

4.32 No records of any other protected or notable species of mammals were returned for the Site.

4.33 Seventeen records for European hedgehog *Erinaceus europaeus* within 2 km of the Site were returned from the data search. The nearest records were from 738 m to the south of the Site between 2010 and 2015. The most recent record was recorded 1,702 m to the south of the Site in 2016.

4.34 It is possible that hedgehog, which is of conservation priority due to recent evidence of decline, uses the buildings on Site for shelter / hibernation. However, as for other mammal species, the site is unlikely to represent a notable or exceptional resource due to lack of vegetative cover and foraging opportunities.

Reptiles

4.35 No records for reptiles were returned directly for the Site.

4.36 Seventy-seven records of four different species of reptile were returned from within 2 km of the Site. The majority of reptile records were recorded to the north of the Site near Pengwern Common.

4.37 There were 22 records for Adder *Vipera berus,* the nearest of which was 1,496 m to the north of the Site in 2013. The most recent record was recorded in 2018. Thirteen records for grass snake *Natrix Helvetica* were returned. The nearest recent record (within the last 10 years) was 1,525 m to the north of the Site. Twenty-two records for common lizard *Zootoca vivipara* were returned, the nearest of which were 1,287 to the north of the Site between 2017 and 2018. Twenty records of slow worm *Anguis fragilis* were returned, the nearest of which was 1,386 m to the north of the Site in 2014.

4.38 The Site has some potential to support low numbers of common reptiles (e.g. slow worm) along the south-facing hedge bases; however the habitat is generally unsuitable due to lack of cover, basking sites and foraging opportunities.

5 Discussion and Recommendations

Protected sites

5.1 The Site does not lie within any statutory or non-statutory designated sites. The closest protected sites (Gower Ash Woods SAC and Parkmill Woodlands and Llethrid Valley SSSI) are located approximately 260 m from the Site at its closest point. The Site is ecologically linked to these sites (which share a common boundary) via the hedgerow network; however no hedgerow removal is anticipated.

5.2 It follows that there are unlikely to be any impacts resulting from development on Statutory or non-statutory sites of conservation interest.

Habitats

5.3 The proposed development will result in minimal construction work beyond the footprint of the new buildings. The habitats likely to be affected by the proposals include areas of improved grassland and arable land which are of negligible ecological value.

5.4 The hedgerows on Site are species-poor and currently intensively managed but nonetheless represent Section 7 priority habitat. However, as access for construction materials and equipment will be through the existing field gates no removal of hedgerows or trees is proposed and no impact on this habitat is anticipated.

Protected species

Amphibians

5.5 The works will not result in impacts to great crested newts or other amphibians, as there is no suitable habitat to support these species (e.g. ponds, hibernacula) on Site. No further consideration will be required in respect of amphibians.

Badger

5.6 No impacts on the badger sett are currently anticipated, however if this should change it is recommended that ecological advice is sought ahead of any work which may cause damage or disturbance and if required the sett should checked for badger activity by an experienced ecologist prior to work commencing.

Bats

5.7 The hedgerows, particularly those along the minor roads on the northern and western edges of the site, may have a functional importance for bat populations associated with the Gower Ash Woods SAC and forming the interest of Llethrid Cottage SSSI. This reflects the proximity of the site to these designated areas, and the opportunities the roads (with their double hedge-lines and more diverse roadside verge plant communities) provide for bats.

5.8 No impacts on bats are currently anticipated given that there will be no hedgerow removal.

5.9 One mature ash tree was identified as having low potential to support roosting bats, however it is not anticipated that this tree will be removed and therefore no further surveys are considered necessary.

Breeding birds

5.10 Nesting birds will be a consideration for the Site. As a guide, the bird nesting season is between March and August inclusive; dates vary by species and can be affected by prevailing weather

conditions. The hedgerows within the Site have the potential to support breeding birds. No hedgerow removal is currently anticipated, however if this should change it is recommended that ecological advice is sought ahead of any work which may cause damage or disturbance to nesting birds. In the event of an active nest being found within an area requiring work, the nest will be left with a suitable stand-off, to be agreed with the ecologist, until such time as the nesting attempt has finished.

Hazel dormouse

5.11 The boundary hedgerows are suitable, albeit suboptimal, habitat for dormouse. However, given that no removal of hedgerows or trees is proposed no impacts on this species are currently anticipated.

5.12 Should the removal of small areas of hedgerow (<10 m) be required, work should be undertaken under an appropriate method statement to reduce any impact on the species (if present) to an acceptable level.

Other mammals

5.13 It is possible that hedgehog may use the buildings for hibernation and shelter and the fields for foraging. Any clearance of stored materials and debris should be carried out during the active season for hedgehog (between March and October inclusive) to avoid disturbing hibernating animals. Any hedgehog found within the work area during construction should be carefully moved off Site to a suitable location.

Reptiles

5.14 Low numbers of common reptiles may use the bases of the southern-facing hedges for basking or hibernation. If any removal of hedgerows is required (currently not anticipated) appropriate mitigation measures should be incorporated into the method statement detailed above. This is likely to include work within the active season for reptiles (between March and October inclusive) and removal of any animals found to a suitable, safe location.

5.15 In addition, storage of loose building materials, debris or waste near the hedgerow bases should be avoided. Rubble, wood piles and other building debris have the potential to provide cover for reptiles so these should be located on short grass or hard substrate away from the hedgerows and not allowed to vegetate.

Opportunities for enhancement

5.16 There are numerous opportunities to improve both the biodiversity value of the Site and to increase people's connection with nature.

Habitat improvement

5.17 A combination of community growing and low-intensity grazing (without the use of lime / fertiliser) of the Site will see botanical diversity gradually improve.

5.18 There are clear opportunities for short to medium term biodiversity gain through:

- Hedgerow management. Cutting of the hedgerows on a longer term rotation, allowing them to achieve greater height and better structure (thereby becoming more valuable to breeding birds and small mammals).
- Strengthening of the south-eastern field boundary through supplementary planting of locally sourced species, and laying some sections of hedge.
- Planting of new native hedgerows either parallel to existing or in other areas of the Site will create additional habitat for a variety of wildlife.

- Field margin creation. Creating fenced margins of even 1-2 m around the field edges would allow ruderal and tall grass species to establish and flower. Some of these species, such as hogweed and cow parsley *Anthriscus sylvestris*, are already present on the roadside field margins, and their flowers support numerous nectaring invertebrates. These in turn provide food for breeding birds, bats and other mammals. Habitat piles incorporated within these features would offer opportunities for hibernating reptiles and amphibians.
- Sowing of 'pollinator strips' i.e. strips of native meadow or cornflower species will create new foraging habitat for invertebrates. These could be positioned alongside existing hedgerows and/or between rows of vegetable to aid crop pollination and contribute to natural pest management.
- Bird boxes. There is the potential to integrate features for colonial nesting species, such as house sparrow, and also raptors, including barn owl *Tyto alba* and kestrel *Falco tinnunculus,* both of which occur locally. The latter is of particular conservation concern in Wales due to a marked recent population decline. These initiatives would be most beneficial in combination with hedgerow management and field margin creation.
- Bat boxes: Inclusion of bat boxes on the larger hedgerow trees will provide new roosting opportunities for bats.
- Pond creation. The fields were damp at the time of survey, with some flash pooling near the gate to the south-western field. This suggests that any newly-created pond might hold water, but this would need to be confirmed through trial pits. The creation of one or more ponds would be of value in acting as 'stepping stones' for amphibians and aquatic invertebrates through the area, and would potentially provide foraging resources for lesser horseshoe (and other) bats, breeding birds, and reptiles. Guidance is readily available on maximising the value of ponds to biodiversity through design and management work. Ponds are a priority habitat in Wales (with reference to Section 7 of the Environment Wales Act, 2016).
- Practices such as Hugelkultur (burying wood under layers of soil and organic material to create a bank for cultivating fruit and vegetables) that may be incorporated within the community growing. The banks / mounds (as well as other features associated with community growing such as compost heaps) can be designed to allow access to amphibians and reptiles, and are particularly valuable if located close to ponds.
- An improvement in soil health is likely to occur through the use of green manures / cultivations. It is recommended that initial baseline measures are taken of soil pH and micro-nutrient levels in order that changes can be identified.

Environmental education

5.19 There are opportunities to increase people's connection with nature through initiatives including:

- Fostering relationships with conservation groups such as the South and West Wales Amphibian and Reptile Group (SWARG). SWARG are likely to be interested in advising on pond design and potentially in events to look at the success of pond creation in terms of colonisation by herpetofauna.
- Establishing reptile tiles (monitoring stations) to check for presence / absence of reptiles in developing field boundary features (headlands and margins).
- Moth trapping evenings. These can be organised through co-operation with local naturalists.
- An annual 'bio blitz' which could involve inviting a range of local nature conservation stakeholders to Site (such as South East Wales Biological Records Centre (SEWBREC) staff, City and County of Swansea ecologists, Gower Ornithological Society, SWARG and others) along with local people to collect biological records (that could be submitted to SEWBREC).
- The use of trail cameras, data loggers and nest box cameras to provide footage of species using the newly-created features within the site for foraging / nesting / commuting.

6 References

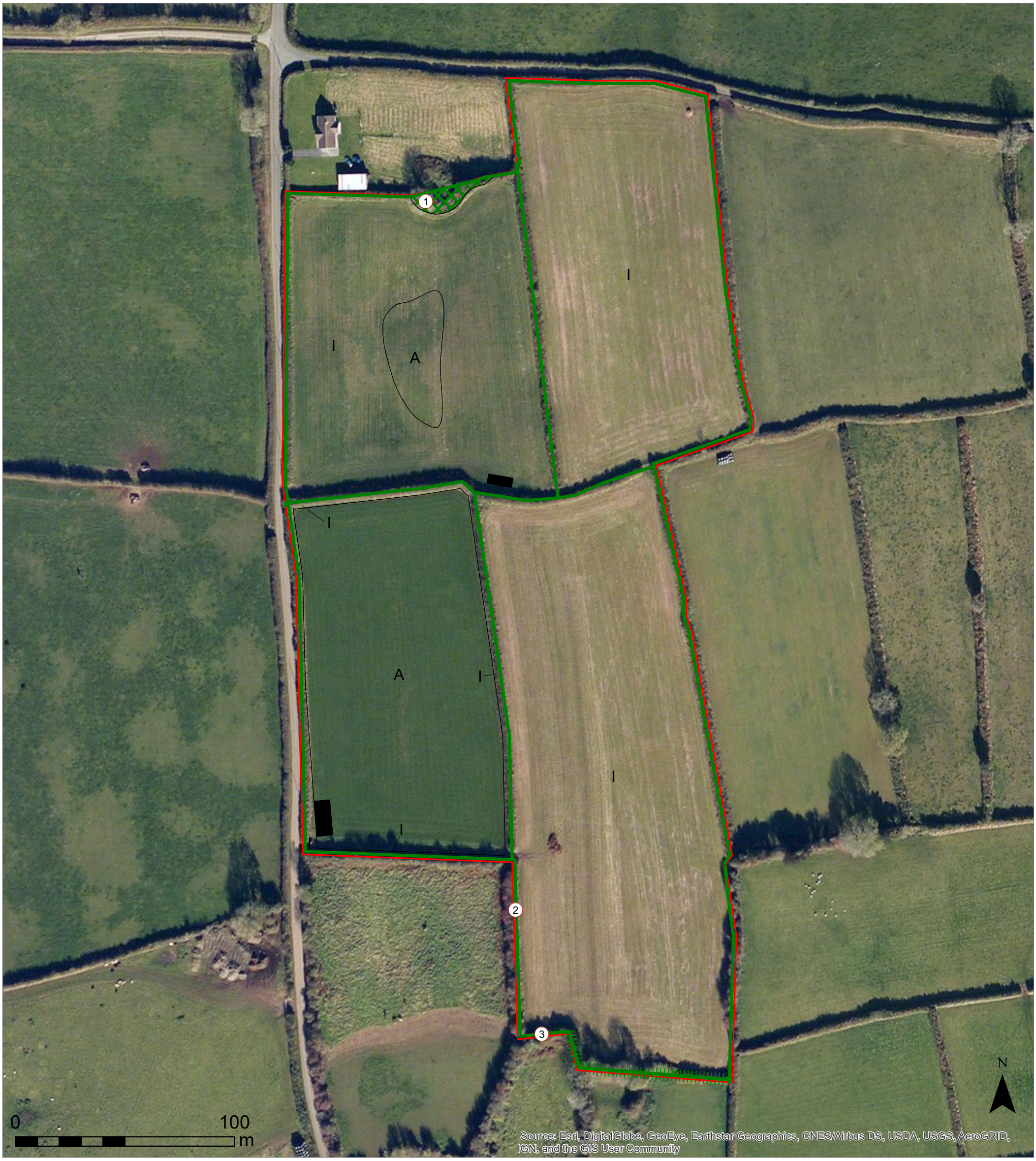
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7 Figures

(overleaf)



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JOB REF: P19-944

PROJECT TITLE
LAND SOUTH OF FURZEHILL GREEN

DRAWING TITLE
Figure 1: Phase 1 Habitat Plan

DATE: 13/02/2020 CHECKED: JC SCALE: 1:1,700
DRAWN: COH APPROVED: COR VERSION: 1.1

LEGEND

- Site boundary
- A — Arable
- Building
- Dense scrub
- I — Improved grassland
- Species-poor intact hedge
- Species-poor hedge with trees
- 1 — Target note

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8 Photographs

Photograph 1: Ash tree (TN1) with low potential to support roosting bats.



Photograph 2: Old badger sett (TN2)



Photograph 3: Improved grassland with bordering species-poor hedgerow and hedgerow trees.



Photograph 4: Improved grassland with bordering species-poor hedgerow



Photograph 5: Arable land	**Photograph 6:** Scrub habitat adjacent toTN1
	

9 Appendices

Appendix 1: Target notes

Appendix 2: Summaries of relevant policies and legislation

Appendix 1: Target Notes

TN1: Ash tree set within hedgerow and small scrub block on northern boundary. No visible potential roost feature (PRF) from ground level but some ivy-cover obscuring main limbs around the crown. Low potential for roosting bats.

TN2: Probable old badger sett in hedge consisting of two entrance holes (both collapsed). No field signs of badger recorded.

TN3: Badger guard hair recorded on well-worn path and push-through in hedgerow. No other field signs recorded.

Appendix 2: Summaries of Relevant Policy and Legislation

9.1 This section briefly summarises the legislation, policy and related issues that are relevant to the main text of the report. The following text does not constitute legal or planning advice.

European protected species (Animals)

9.2 The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (as amended) consolidates the various amendments that have been made to the original (1994) Regulations which transposed the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law.

9.3 "European protected species" (EPS) of animal are those which are present on Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (as amended). They are subject to the provisions of Regulation 41 of those Regulations. All EPS are also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these pieces of legislation make it an offence to:

a. Intentionally or deliberately capture, injure or kill any wild animal included amongst these species

b. Possess or control any live or dead specimens or any part of, or anything derived from a these species

c. deliberately disturb wild animals of any such species

d. deliberately take or destroy the eggs of such an animal, or

e. intentionally, deliberately or recklessly damage or destroy a breeding site or resting place of such an animal, or obstruct access to such a place

9.4 For the purposes of paragraph (c), disturbance of animals includes in particular any disturbance which is likely—

a. to impair their ability—

i. to survive, to breed or reproduce, or to rear or nurture their young, or

ii. in the case of animals of a hibernating or migratory species, to hibernate or migrate; or

b. to affect significantly the local distribution or abundance of the species to which they belong.

9.5 Although the law provides strict protection to these species, it also allows this protection to be set aside (derogated) through the issuing of licences. The licences in Wales are currently determined by Natural Resources Wales (NRW). In accordance with the requirements of the Regulations (2019), a licence can only be issued where the following requirements are satisfied:

a. The proposal is necessary 'to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment'

b. 'There is no satisfactory alternative'

c. The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Definition of breeding sites and resting places

9.6 Guidance for all European Protected Species of animal, including bats and great crested newt, regarding the definition of breeding and of breeding and resting places is provided by The European Council (EC) which has prepared specific guidance in respect of the interpretation of

various Articles of the EC Habitats Directive.[5] Section II.3.4.b) provides definitions and examples of both breeding and resting places at paragraphs 57 and 59 respectively. This guidance states that 'The provision in Article 12(1) (d) [of the EC Habitats Directive] should therefore be understood as aiming to safeguard the ecological functionality of breeding sites and resting places.' Further the guidance states: 'It thus follows from Article 12(1)(d) that such breeding sites and resting places also need to be protected when they are not being used, but where there is a reasonably high probability that the species concerned will return to these sites and places. If for example a certain cave is used every year by a number of bats for hibernation (because the species has the habit of returning to the same winter roost every year), the functionality of this cave as a hibernating site should be protected in summer as well so that the bats can re-use it in winter. On the other hand, if a certain cave is used only occasionally for breeding or resting purposes, it is very likely that the site does not qualify as a breeding site or resting place.'

Birds

9.7 All nesting birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition to this, for some rarer species (listed on Schedule 1 of the Act), it is an offence to disturb them whilst they are nest building or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.

9.8 The Conservation of Habitats and Species (Amendment) Regulations 2012 has placed new duties on competent authorities (including Local Authorities and National Park Authorities) in relation to wild bird habitat. These provisions relate back to Articles 1, 2 and 3 of the EC Directive on the conservation of wild birds (2009/147/EC, 'Birds Directive'[6]) (Regulation 9A(2) & (3) require that 'in the exercise of their functions as they consider appropriate' these authorities must take steps to contribute to the 'preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of upkeep, management and creation of such habitat…'

9.9 In relation to the duties placed on competent authorities under the 2012 amendment Regulation 9A (8) states: 'So far as lies within their powers, a competent authority in exercising any function [including in relation to town and country planning] in or in relation to the United Kingdom must use all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds (except habitats beyond the outer limits of the area to which the new Wild Birds Directive applies).'

Badger

9.10 Badger is protected under the Protection of Badgers Act 1992. It is not permitted to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so; or to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it. A badger sett is defined in the legislation as "a structure or place, which displays signs indicating current use by a badger".

9.11 Technical Advice Note 5 (TAN 5)[7] provides further guidance on statutory obligations towards badger within the planning system. Of particular note is section 6.4.3, which states that "The likelihood of disturbing a badger sett, or adversely affecting badgers' foraging territory, or links between them, or significantly increasing the likelihood of road or rail casualties amongst badger populations, are capable of being material considerations in planning decisions."

9.12 Natural Resources Wales provides guidance for developers[8], which is capable of being a material consideration in planning decisions. Natural Resources Wales recommends mitigation to avoid

[5] Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC. (February 2007), EC.
[6] 2009/147/EC Birds Directive (30 November 2009. European Parliament and the Council of the European Union.
[7] https://gov.wales/docs/desh/policy/100730tan5en.pdf
[8] https://cdn.naturalresources.wales/media/684003/badger-fact-sheet-for-developers-english.pdf?mode=pad&rnd=131620320080000000

impacts on badger setts, which includes maintaining or creating new foraging areas and maintaining or creating access (commuting routes) between setts and foraging/watering areas.

Reptiles

9.13 All native reptile species receive legal protection in Great Britain under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Viviparous lizard, slow-worm, grass snake and adder are protected against killing, injuring and unlicensed trade only. Sand lizard and smooth snake receive additional protection as "European Protected species" under the provisions of the Conservation of Habitats and Species Regulations 2010 (as amended) and are fully protected under the Wildlife and Countryside Act 1981 (as amended).

9.14 All six native species of reptile are included as 'species of principal importance' for the purpose of conserving biodiversity under Section 7 of the Environment (Wales) Act 2016. Planning must incorporate two aims where reptiles are present:

- To protect reptiles from any harm that might arise during development work;
- To ensure that sufficient quality, quantity and connectivity of habitat is provided to accommodate the reptile population, either on-site or at an alternative site, with no net loss of local reptile conservation status.

Hedgerows

9.15 Article 10 of the Habitats Directive[9] requires that 'Member States shall endeavour…to encourage the management of features of the landscape which are of major importance for wild fauna and flora. Such features are those which, by virtue of their linear and continuous structure…or their function as stepping stones…are essential for the migration, dispersal and genetic exchange of wild species'. Examples given in the Directive include traditional field boundary systems (such as hedgerows).

9.16 The aim of the Hedgerow Regulations 1997[10], according to guidance produced by the Department of the Environment[11], is "to protect important hedgerows in the countryside by controlling their removal through a system of notification. In summary, the guidance states that the system is concerned with the removal of hedgerows, either in whole or in part, and covers any act which results in the destruction of a hedgerow. The procedure in the Regulations is triggered only when land managers or utility operators want to remove a hedgerow. The system is in favour of protecting and retaining 'important' hedgerows.

9.17 The Hedgerow Regulations set out criteria that must be used by the local planning authority in determining which hedgerows are 'important'. The criteria relate to the value of hedgerows from an archaeological, historical, wildlife and landscape perspective.

[9] Council Directive 92/43/EEC of 2i May 1992 on the conservation of natural habitats and of wild fauna and flora.
[10] Statutory Instrument 1997 No. 1160 – The Hedgerow Regulations 1997. HMSO: London
[11] The Hedgerow Regulations 1997: a guide to the law and good practice, HMSO: London