

# Groes-y-Garreg Preliminary Ecological Appraisal

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## 1 INTRODUCTION

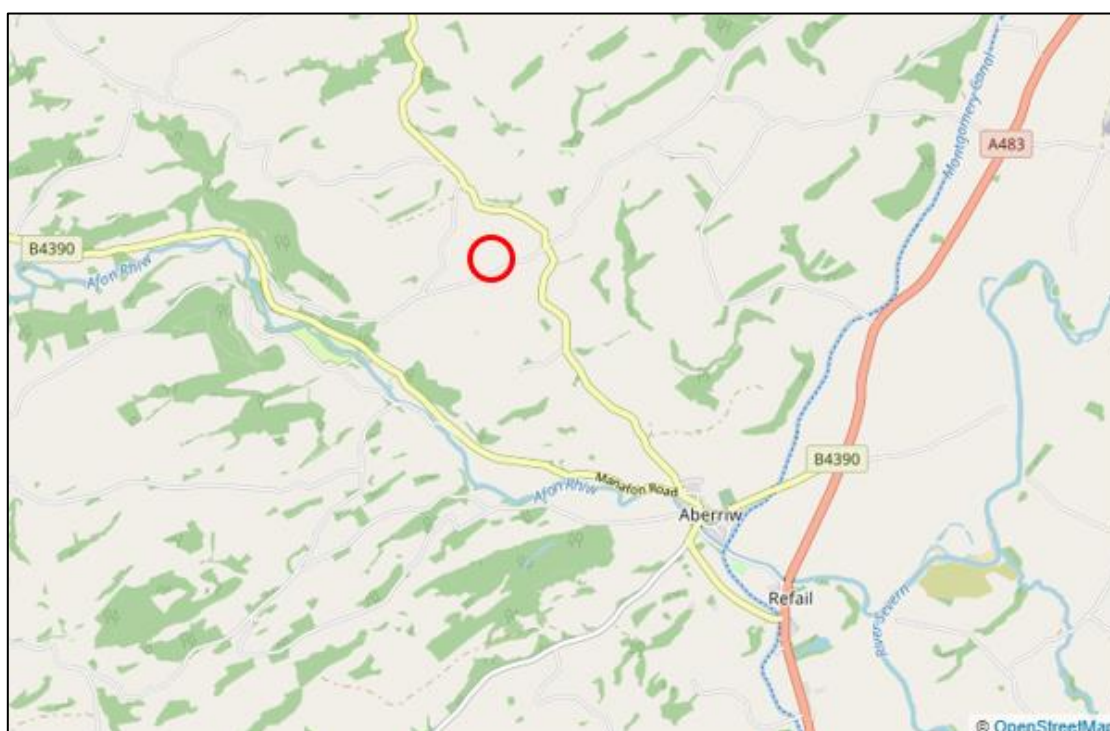
### 1.1 Purpose of Report

This Preliminary Ecological Appraisal (PEA) has been completed in connection with a proposed development of two poultry units on land at Groes-y-Garreg, Berriew, Powys (OS Grid Location SJ 171 027). The location of the proposed development site is shown in *Figure 1* and the proposed development plans are fully detailed in *Section 4*.

A site survey was carried out on 14<sup>th</sup> November 2018 by Turnstone Ecology Ltd and consisted of a Phase 1 Habitat Survey and a Protected Fauna Survey and Habitat Suitability Assessment. An updated site visit was completed on 20<sup>th</sup> March 2019 to undertake a camera trapping survey and tree assessment.

This report details survey and assessment methodology along with the results of a desk-based study and on-site surveys. It also provides an assessment of potential impacts and appropriate mitigation to offset any impacts associated with the proposal and to satisfy national and local planning policies.

*Figure 1. Location of proposed development*



### 1.2 Ecological Context

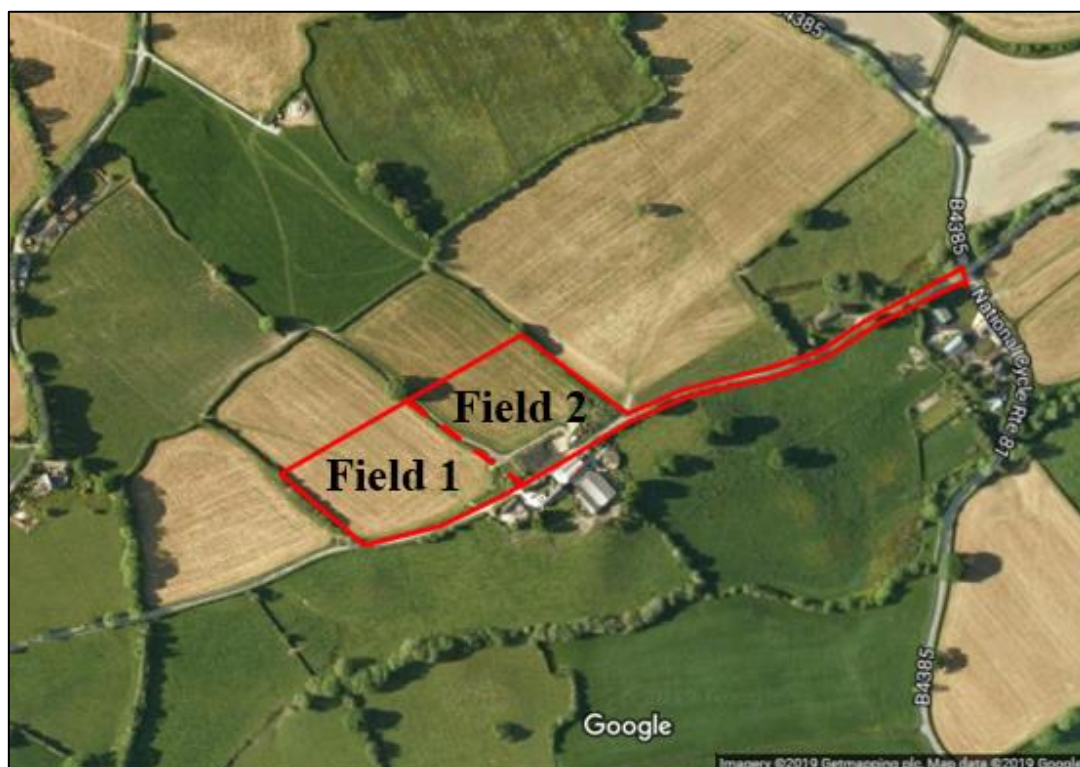
The proposed development site is located approximately 2 km north-east of the village of Berriew and comprises two fields dominated by improved grassland with a hardstanding access track and yard to the south-east (*Figure 2*). The proposals include the construction of two poultry units, hardstanding yard and associated access within the areas of improved grassland and hardstanding.

The site is located in a rural setting and is accessed off a single-track country lane leading off the B4385. The north-eastern, north-western and south-eastern boundaries of site are formed by hedgerows and the south-western boundary is formed by a combination of mature hedgerow and scattered trees. Beyond the immediate site boundaries, further agricultural fields are located in each direction and to the south-east of site is Groes-y-Garreg farm.

Beyond Groes-y-Garreg farm, and approximately 100m south of site, is a small field drain which flows west to east and adjoins Caeau Glyn Site of Special Scientific Interest (SSSI) which is approximately 555m east of site. Glyn Wood Local Wildlife Site (LWS) is located beyond Caeau Glyn SSSI approximately 825m north-east-east of site. The Luggy Brook, a tributary of the River Severn, is located approximately 815m north-east of the proposed development site at its closest point and the River Rhiw, which adjoins the River Severn, is located approximately 1 km south-west of site.

The wider landscape is dominated by agricultural fields, woodlands, watercourses and scattered residential dwellings and farms.

*Figure 2. Proposed development site (red line boundary showing development area within Fields 1&2 and lane approaching site where passing place and visibility splay will be created)*



## 2 METHODS

### 2.1 Desk-based Study

Information relating to designated sites, sites where European Protected Species (EPS) Licences have been granted between 2009 and 2016 (only available in England) and historic records of protected species within 2 km of the proposed development site were obtained from Magic ([www.magic.gov.uk](http://www.magic.gov.uk)) and other freely available information on the internet, such as planning portals.

Any species-specific historic records are detailed within the relevant species accounts in the *Results* section.

### 2.2 Phase 1 Habitat Survey

The survey methods were based on the Phase 1 Habitat Survey approach (Joint Nature Conservation Committee 2010), which is a standardised method to survey main habitat types. Plant nomenclature in this report follows Rose (*Revised Edition 2006*) for native, naturalised and garden varieties of vascular plant. Introduced species and garden varieties are not always identified.

### 2.3 Protected Fauna Survey and Assessment

The habitats on site were assessed for suitability for protected fauna that occur in the region and obvious signs and incidental sightings of protected species were noted where present. Taking into consideration the geographical region and habitat types on and adjacent to site, the protected species and species groups that could be encountered are listed below.

- Badger
- Bats
- Dormouse
- Nesting birds
- Great Crested Newt
- Reptiles

Details of initial survey methods for each relevant species are given below.

#### 2.3.1 Badger

Where access allowed, a comprehensive assessment was carried out to identify areas that are used by Badgers (*Meles meles*) for foraging and sett digging. Signs of Badgers including setts, foraging signs, paths and latrines were recorded where present.

### 2.3.2 Bats

Any buildings and trees on or adjacent to the site were visually surveyed to assess them for their potential to support roosting bats, although a thorough inspection of all potential roosting features would not be undertaken as part of the Phase 1 survey.

Habitats were assessed for their suitability for use by foraging or commuting bats. Areas of particular interest vary between species, but generally include sheltered areas and those habitats with good numbers of insects, such as woodland, scrub, hedges, watercourses, ponds, lakes and more species-rich or rough grassland.

### 2.3.3 Dormouse

Habitats were assessed for their general suitability for use by Dormouse (*Muscardinus avellanarius*), which generally use areas of dense woody vegetation cover. Dormice are most likely to be found where there is a wide diversity of woody species contributing to three-dimensional habitat complexity, a number of food sources, plants suitable for nest-building material and good connectivity to other areas of suitable habitat. A search for hazelnuts opened by Dormouse was also completed on and adjacent to site.

### 2.3.4 Nesting birds

Habitat that might be used by nesting birds was identified and actively nesting birds or evidence of nesting birds noted where present. Special consideration was given to the potential presence of Barn Owl (*Tyto alba*), which is a Schedule 1 protected bird species.

### 2.3.5 Great Crested Newt

The suitability of any aquatic and terrestrial habitat on the site, and in the immediate vicinity, was assessed for suitability for use by Great Crested Newts (*Triturus cristatus*). Great Crested Newts are known to travel up to 500 m between breeding ponds and suitable terrestrial habitat, so a desk-based search was undertaken for any ponds up to 500 m from the site using OS maps and aerial imagery. The terrestrial habitat between the site and these ponds, and therefore connectivity to the site, was also considered.

### 2.3.6 Reptiles

The site was assessed for suitability for use by widespread species of reptiles, with particular attention paid to those features that could be used as basking areas (*e.g.* south-facing slopes), hibernation sites (*e.g.* banks, walls, piles of hardcore) and opportunities for foraging (*e.g.* rough grassland and scrub). The site was assessed for its suitability for the commoner reptile species which have broadly similar habitat requirements but more specific requirements include those shown below (Beebee & Griffiths 2000).

- Common Lizards (*Zootoca vivipara*) use a variety of habitats from woodland glades to walls and pastures, although one habitat they use is brownfield sites



- Slow-worms (*Anguis fragilis*) use similar habitats to Common Lizards, and are often found in rank grassland, gardens and derelict land
- Grass Snakes (*Natrix natrix*) have broadly similar requirements to Common Lizards but with a greater reliance on ponds and wetlands, where they prey on amphibians
- Adder (*Vipera berus*) use a range of fairly open habitats with some cover, but are most often found in dry heath

## 2.4 Constraints

November and March are not ideal months to undertake Phase 1 surveys as certain plants may not be present or identifiable and certain animal signs may be harder to detect. However, for a site of this size, location and habitat composition it is not considered that this would have had a significant effect on the survey results or assessment of the site.

## 2.5 Criteria for Assessment

The scientific value of habitats for nature conservation is assessed according to widely accepted criteria of which the most important are naturalness, extent, rarity, and diversity.

The assessment of impacts is based on the principles within Chartered Institute of Ecology and Environmental Management (CIEEM) Environmental Impact Assessment (EIA) Guidance (2016) which assesses the impacts of the proposal on ecological receptors taking in to consideration extent, duration, reversibility, timing, frequency and certainty.

Mitigation and enhancement is designed to reduce the level of impact upon receptors and provide ecological enhancement in order to meet current legislation and planning policy. The information below has therefore been considered during assessment.

- Criteria that have been developed to assist in the identification of statutory Sites of Special Scientific Interest (SSSIs) (JNCC 2013)
- Habitats and species of Principal Importance included under Section 41 (England) and Section 42 (Wales) of the Natural Environment and Rural Communities (NERC) Act 2006
- The legal status of habitats and species according to the EU ‘Habitats’ Directive 1992
- CIEEM Guidelines (2018) for assessing the value of ecological receptors within a defined geographical context using the following categories: international (*i.e.* Europe); UK and national (England); regional; county; Unitary Authority; local or parish; and zone of influence. Receptors are identified as ‘important’ at these levels, or as ‘not important’
- Species protected by European directives
- Species protected by the *Wildlife and Countryside Act 1981* (as amended)
- Other species listed as scarce or notable in literature issued by conservation organisations or learned societies *e.g.* vascular plant species listed in Stewart *et al.* (1994) and Red and Amber List Birds of Conservation Concern (Eaton *et al.* 2015)

- Local Wildlife Site selection criteria
- National Policy Planning Framework (NPPF), 2018
- BS42020:2013 – Biodiversity Code of practice for planning and development
- Protected species handbooks and best practice guidelines
- The Powys Local Biodiversity Action Plan (BAP), which identifies and prioritises local habitats and species of conservation importance. These habitats and species are stated as
  - Habitats: Upland oak woodland, Lowland woodpasture and parkland, Wet woodlands, Coniferous woodland, Scrub and ffridd, Linear habitats (hedges and verges), Rivers and stream, Mesotrophic waters, Lowland raised bog, Rhos pastures, Lowland meadows, Lowland dry acid grassland, Upland calcareous grassland, Upland and lowland heath, Traditional orchards and Farmland and Gardens.
  - Species: Alien Plant species, Allis Shad (*Alosa alosa*) & Twaite Shad (*Alosa fallax*), Brown Hare (*Lepus europaeus*), Brown Trout (*Salmo trutta*), Climbing Corydalis Weevil (*Procas granulicollis*), Curlew (*Numenius arquata*), European Otter (*Lutra lutra*), Fairy Shrimp (*Chirocephalus diaphanous*), Floating Water Plantain (*Luronium natans*), Globeflower (*Trollius europaeus*), Great Crested Newt (*Triturus cristatus*), Hazel Dormouse (*Muscardinus avellanarius*), High Brown Fritillary (*Fabriciana adippe*), Nightjar (*Caprimulgus europaeus*), Pearl-bordered Fritillary (*Boloria euphrosyne*), Pillwort (*Pilularia globulifera*), Pipistrelle Bat (*Pipistrellus pipistrellus* & *P. pygmaeus*), Red Kite (*Milvus milvus*), Red Northern Wood Ant (*Formica lugubris*), Red Squirrel (*Sciurus vulgaris*), River Jelly Lichen (*Collema dichotomum*), River Lamprey (*Lampetra fluviatilis*), Slender Green Feather Moss (*Hamatocaulis vernicosus*), Tree Sparrow (*Passer montanus*), Water Vole (*Arvicola amphibius*), Waxcap Grasslands, White-clawed Crayfish (*Austropotamobius pallipes*) and Wood Bitter Vetch (*Vicia orobus*).

### 3 RESULTS

#### 3.1 Desk Study

##### 3.1.1 Designated Sites

There are no internationally designated sites within 10 km of the proposed development site and three Sites of Special Scientific Interest (SSSI) within 5 km of site.

Caeau Glyn Site of Special Scientific Interest (SSSI) is located approximately 530m east of the proposed development site. The SSSI is a fine example of unimproved, slightly base-rich, dry grassland supporting several locally uncommon plant species. The site comprises four small fields lying on sloping ground west of the Luggy Brook; they have been mown for hay in the past, but are currently grazed by cattle. The sward is fairly uniform, being dominated mainly by Crested Dog's-tail (*Cynosurus cristatus*), Red Fescue (*Festuca rubra*), Common Bent (*Agrostis capillaris*) and Sweet Vernal-grass (*Anthoxanthium odoratum*), although Perennial Rye-grass (*Lolium perenne*) and Rough Meadow-grass (*Poa trivialis*) are abundant in the areas more heavily trampled by cattle. Common Knapweed (*Centaurea nigra*), Cat's-ear (*Hypochaeris radicata*), Field Wood-rush (*Luzula campestris*), Ribwort Plantain (*Plantago lanceolata*), Meadow Buttercup (*Ranunculus acris*) and Red Clover (*Trifolium pratense*) are frequent throughout. Other characteristic species include Quaking-grass (*Briza media*), Yellow Oat-grass (*Trisetum flavescens*), Glaucous Sedge (*Carex flacca*), Hairy Lady's-mantle (*Alchemilla filicaulis*), Pignut (*Conopodium majus*), Rough Hawkbit (*Leontodon hispidus*), Autumn Hawkbit (*Leontodon autumnalis*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Bulbous Buttercup (*Ranunculus bulbosus*), Selfheal (*Prunella vulgaris*), Oxeye Daisy (*Leucanthemum vulgare*), Tufted Vetch (*Vicia cracca*) and Meadow Vetchling (*Lathyrus pratensis*). The base-rich nature of the soil is indicated by the presence of species such as Agrimony (*Agrimonia eupatoria*), Common Milkwort (*Polygala vulgaris*), and Cowslip (*Primula veris*), which are all of restricted distribution in Montgomeryshire.

Coed Byrwydd SSSI is located approximately 1.54 km north-west of site the proposed development site. The site is a good example of oak-ash woodland with a well-developed shrub layer and a good diversity of flowering plant species. Species which occur frequently include Enchanter's-nightshade (*Circaea lutetiana*), Bluebell (*Hyacinthoides non-scriptus*), Yellow Archangel (*Galeobdolon luteum*), Dog's Mercury (*Mercurialis perennis*), Wood Avens (*Geum urbanum*), and Common Dog-violet (*Viola riviniana*). Other species of interest include Alternate-leaved Golden-saxifrage (*Chrysosplenium alternifolium*), Wood Melick (*Melica uniflora*) and Broad-leaved Helleborine (*Epipactis helleborine*) - all three relatively uncommon in Montgomery.

Montgomery Canal SSSI is located approximately 2.3 km north-east of the proposed development site. The site is of special interest because it supports aquatic, emergent and marginal plant communities of exceptional richness, including a large population of the internationally rare and threatened floating Water Plantain (*Luronium natans*) and a several other rare and scarce water plants. An important aquatic invertebrate assemblage is also present. The present nature of the plant and animal communities depends

upon a complex interaction between factors such as water chemistry, water flow and management regimes. Otters (*Lutra lutra*) frequently use the canal for feeding purposes particularly where close to major rivers.

### *Non-statutory designated sites*

Glyn Wood Local Wildlife Site (LWS), a broadleaved woodland, is located approximately 825m north-east-east of the proposed development site.

### **3.1.2 European Protected Species Licence Sites**

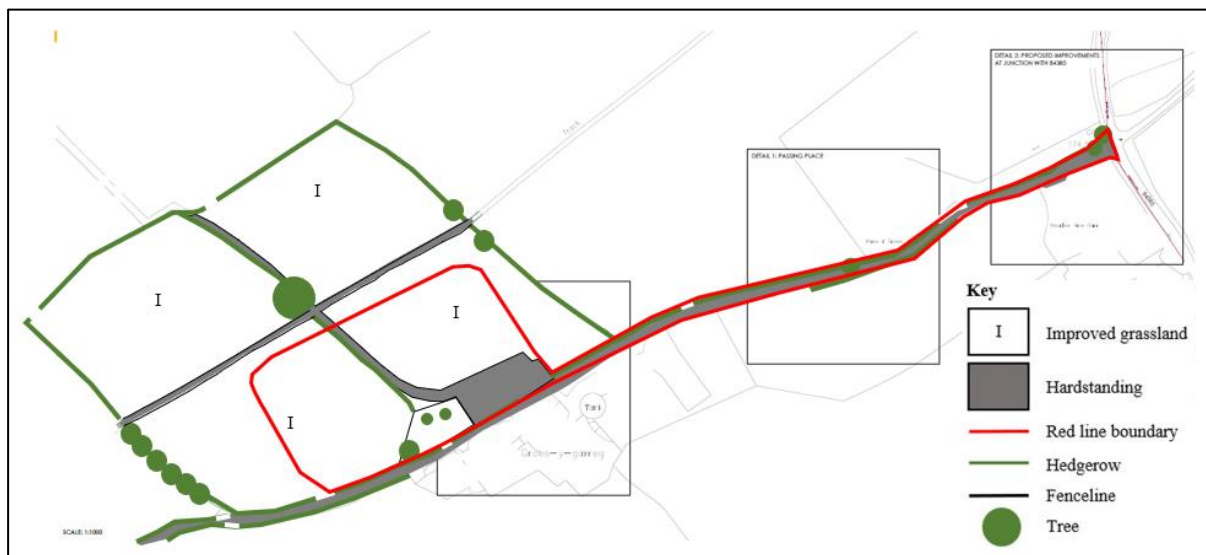
Information on EPS licences is not currently available in Wales.

## **3.2 Ecological Surveys**

Phase 1 habitat types recorded within and immediately adjacent to the proposed development sites are listed below and shown in *Figures 3 and 4*.

- Improved grassland
- Hedgerows and trees
- Hardstanding

*Figure 3. Phase 1 Map (red line boundary showing development area within Fields 1&2)*



The site or immediately adjacent areas contain habitat suitable for the protected species listed below.

- Badger
- Bats
- Dormouse
- Nesting birds
- Great Crested Newt

- Reptiles

### 3.3 Phase 1 Habitat Survey

#### 3.3.1 Improved grassland

The proposed development site is located at the southern end of two short-sward improved grassland fields (*Plates 1 and 2*). Species comprise a mix of common grasses dominated by Annual Meadowgrass (*Poa annua*), Perennial Ryegrass (*Lolium perenne*) and Yorkshire Fog (*Holcus lanatus*), whilst herb species include White Clover (*Trifolium repens*), Creeping Buttercup (*Ranunculus repens*), Common Dandelion (*Taraxacum officinale*), Broad-leaved Dock (*Rumex obtusifolius*), Common Nettle (*Urtica dioica*), Common Hogweed (*Heracleum sphondylium*), Creeping Thistle (*Cirsium arvense*), Red Dead Nettle (*Lamium purpureum*), Sun Spurge (*Euphorbia helioscopia*), Common Chickweed (*Stellaria media*), Common Daisy (*Bellis perennis*), Pineappleweed (*Matricaria discoidea*) and Broadleaf Plantain (*Plantago major*). Scattered piles of agricultural materials are present at the corner of Field 2 (*Plate 3*).

*Plate 1. Improved grassland within Field 1 (looking north-west from the southern end of site)*





*Plate 2. Improved grassland within Field 2 (looking south-west from eastern end of site)*



*Plate 3. Scattered piles of agricultural materials at south-eastern corner of Field 2*



At the south-eastern corner of Field 1 there is a small fenced area of grassland, previously used to house poultry which contains outgrown improved grassland, patches of Common Nettle and scattered young trees (*Plate 4*).



*Plate 4. Outgrown improved grassland at south-eastern corner of Field 1 (looking south-east)*



### 3.3.2 Hedgerows and trees

Mature hedgerows form the north-eastern, north-western and south-eastern boundaries of Fields 1 and 2 (*Plates 5-7*). The south-western boundary of Field 2 is formed by a combination of sections of mature hedgerow and scattered semi-mature trees. Species within the hedgerows include Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Ash (*Fraxinus excelsior*), Hazel (*Corylus avellana*), Hazel (*Corylus avellana*), Field Maple (*Acer campestre*), Holly (*Ilex aquifolium*), Ivy (*Hedera* sp.), Bramble (*Rubus fruticosus* agg.) and Dog Rose (*Rosa canina* agg.). An individual mature Oak (*Quercus robur*) is located at the centre of the boundary hedgerow between Fields 1 and 2 but outside the footprint of the development (*Plate 6*).

*Plate 5. Mature hedgerow along north-eastern boundary of Field 1 and south-western boundary of Field 2 (looking north-west from south-eastern corner of Field 1)*



*Plate 6. Mature Oak along central hedgerow between Fields 1 and 2 (looking south-east from northern corner of Field 1)*





*Plate 7. South-eastern boundary hedgerow of Field 1 (looking south-west)*



*Plate 8. South-eastern boundary of Field 2 showing hedgerow and hardstanding yard (looking south-west)*



Mature and gappy hedgerows and scattered trees are located along either side of the lane leading to site. Species within the roadside hedgerow include Holly, Hazel, Ash, Ivy, Blackthorn, Hawthorn, Elder, Yew (*Taxus baccata*) with ground flora including Hard Fern (*Blechnum spicant*), Red Dead-nettle (*Lamium purpureum*), Primrose (*Primula vulgaris*), Common Nettle, Cleavers (*Galium aparine*), Lords



and Ladies (*Arum maculatum*), Herb Robert (*Geranium robertianum*) and Lesser Celandine (*Ficaria verna*). A semi-mature Ash is proposed for removal to create a passing place along the lane (*Plate 9*) and a mature ivy-clad Ash and semi-mature Alder are also proposed for removal at the end of the lane in order to create a suitable visibility splay (*Plate 10*).

*Plate 9. Ash proposed for removal in passing place along lane approaching site (looking north-east)*



*Plate 10. Mature ivy-clad Ash and semi-mature Alder proposed for removal to create visibility splay (looking north-east)*





### 3.3.3 Hardstanding

A hardstanding track and access gateway runs north to south through the centre of site and along the western boundary of Field 2 (*Plate 11*). The hardstanding track leads to a hardstanding yard at the southern end of site (*Plate 12*).

*Plate 11. Hardstanding track running north-west to south-east through centre of site (looking south-east from north-western edge of development area)*



*Plate 12. Hardstanding yard at southern end of site (looking north from south-western edge of site)*



### **3.4 Protected Fauna**

#### **3.4.1 Badger**

No definitive evidence of Badger was recorded on or adjacent to the proposed development site however mammal tracks that could have been made by Badger were noted entering the field along the north-western and south-eastern field boundaries and a possible Badger hole was recorded during the November 2018 site visit. During an updated site visit undertaken in March two additional holes were also noted in close proximity to the original hole. A camera trap survey was undertaken for a period of four weeks however no Badgers were recorded using the holes and dogs from Groes-y-Garreg were noted digging out rabbit holes, creating larger 'Badger-sized' holes.

The hedgerow bases around the boundaries of site and grassland provide suitable habitat for foraging and sett creation.

#### **3.4.2 Bats**

There is no suitable roosting habitat within the proposed development site and no features suitable for roosting bats (frost cracks, knot holes etc) were noted on the mature Oak tree or on the semi-mature trees along the field boundaries.

No features suitable for roosting bats were noted within the semi-mature Alder or semi-mature Ash proposed for removal along the lane leading to site however the mature ivy-clad Ash tree that will be removed to create a suitable visibility splay offers suitable roosting habitat for bats (*Plate 8*).

The boundary hedgerows and trees around site and along the lane leading to site provide suitable foraging and commuting habitat for bats however the short sward improved grassland within the development footprint is unlikely to be of importance for bats.

#### **3.4.3 Dormouse**

There are no apparent records of Dormouse within 2 km of the proposed development site.

The boundary hedgerows provide some suitable foodplants for Dormouse although the hedgerows are sparse and gappy with frequent gaps created by access gateways around the field boundaries and the site is poorly connected to any extensive Dormouse suitable habitat.

#### **3.4.4 Birds**

A disused nest (possible Buzzard or Corvid) was noted within the mature Oak tree to the north of the development footprint. The hedgerows and trees around the boundaries of site and along the lane leading to site provide suitable habitat for breeding birds.

Ground nesting species such as Skylark (*Alauda arvensis*), a UKBAP and Red List species, are unlikely to occur within the proposed development footprint due to the close proximity to hedgerows and trees and short sward of the improved grassland.

There is no suitable habitat for nesting Barn Owl (*Tyto alba*) on or adjacent to the proposed site. The grassland around the edges of site provide suitable habitat for hunting Barn Owl although there are no apparent records of this species within 2 km of the proposed development site.

#### **3.4.5 Great Crested Newt**

There are no apparent records of Great Crested Newt within 2 km of the proposed development site and no ponds within 500m of site.

Suitable Great Crested Newt terrestrial habitat on and adjacent to site is limited to the hedgerow bases and scattered piles of agricultural materials at the south-eastern corner of Field 2, which provide suitable habitat for foraging, commuting and hibernating Great Crested Newt. The short sward improved grassland is not suitable for Great Crested Newt due to the lack of cover but could be crossed during dispersal.

#### **3.4.6 Reptiles**

There are no apparent records of common reptile species within 2 km of the proposed development site.

Suitable habitat for reptiles is limited to the hedgerow bases and scattered piles of agricultural material at the south-eastern corner of Field 2 which could be used by foraging, dispersing and hibernating reptiles.

The improved grassland and hardstanding are only of limited suitability for dispersing reptiles and unsuitable for hibernating and foraging due to the lack of cover.

## 4 EVALUATION

### 4.1 Summary of Proposals

The proposals include the construction of two poultry units, hardstanding yard and associated access (*Figure 4*). Works will directly affect ecologically poor improved grassland and hardstanding as well as a section of hedgerow and three trees which are of higher ecological value.

*Figure 4. Proposed development plan*



The Powys BAP lists 17 Habitat Action Plans including Linear habitats (hedges and verges), of which an approximate 85m section of hedgerow will be directly affected by the proposed development.

The Powys BAP also lists 28 Species Action Plans including Brown Hare, Great Crested Newt, Hazel Dormouse, Pipistrelle Bat and Red Kite. These species could be directly or indirectly affected by the proposed development and appropriate project design and mitigation will need to be adhered to ensure there will be no negative impacts on them as a result of the proposals. Ecological enhancements are also recommended to ensure the proposals result in a positive ecological gain which is in accordance with the National Planning Policy Framework.

### 4.2 Designated Sites

#### 4.2.1 General

Caeau Glyn SSSI and Coed Byrwydd SSSI are located approximately 530m east and 1.54 km north-west of the proposed development site respectively. The Montgomery Canal SSSI is located

approximately 2.3 km to the north-east and Glyn Wood LWS is located approximately 825m north-east-east of the proposed development site.

There is potential for impacts on Caeau Glyn Fields SSSI and Glyn Fields LWS to the east and north-east-east of site due to ammonia emissions. Appropriate mitigation will therefore need to be put in place to limit the impact of ammonia pollution on the botanical value of the SSSI and LWS.

Consideration also needs to be given to the potential impacts of drainage and surface water run-off on the field drain located approximately 100m south of site and further downstream where it adjoins Caeau Glyn Fields SSSI, located approximately 555m east of site. Appropriate mitigation measures will be put in place to ensure there are no significant negative impacts on the field drain or Caeau Glyn Fields SSSI and the species that they support.

#### **4.2.2 Mitigation**

Measures are to be put in place to ensure there are no significant negative impacts on the field drain to the south of site, which flows towards Caeau Glyn Fields SSSI, and the species it supports.

The proposed drainage and dirty water treatment methods will need to ensure that there are no impacts on the hydrology and ecology of the field drain and that no dirty water will enter the watercourse and subsequently discharge into Caeau Glyn Field SSSI. Water treatment and discharge methods will be fully detailed in the planning application but should include the following:

- No work will be undertaken within 30m of the field drain;
- The south-eastern boundary of the development footprint will be fenced to prevent any surface water run-off into the field drain during construction;
- Spill kits will be stored within the site compound during and post construction and all spills will be cleaned up accordingly and if necessary reported;
- All chemical substances and hazardous materials will be stored in accordance EA guidelines with all diesel fuel and other lubricants will be stored in appropriate containers within double bunded storage areas;
- Any washing of concreting vehicles will be done well away from any watercourses and/or drainage systems; and
- Any re-fuelling and re-lubrication will only be completed in an approved area in which a spill kit is available;
- Any incidents / accidents would need to be immediately reported to the Environment Agency.

The proposed drainage methods and mitigation measures will ensure there will no significant negative impacts on the field drain and consequently no impacts further downstream on the Caeau Glyn Fields SSSI and the habitats and species it supports.



### *Tree planting*

No specific measures are recommended within the ammonia report (*Reference: 01.0127.001/AQ v1; Isopleth, March 2019*) in order to mitigate ammonia output from the proposed poultry units on the designated sites and ancient woodlands within 5 km of site due to the distance between the proposed site and the designated sites, the status and ammonia sensitivity of the designated sites and that the designated sites are each above the lower critical load irrespective of the impacts from the proposed development. However, in order to provide ecological enhancement and create a vegetative buffer which will capture air-borne Ammonia within the plant tissue, additional tree planting is recommended. Tree planting will be undertaken to the east and west of the proposed poultry sheds and will consist of woodland belts approximately 30m x 85m. The shelter belts will be planted between the site and Caeau Glyn SSSI and Glyn Wood LWS to the east and south-east of site and between the site and The Fridd Ancient Woodland (AW) to the west of site (*Figure 5*).

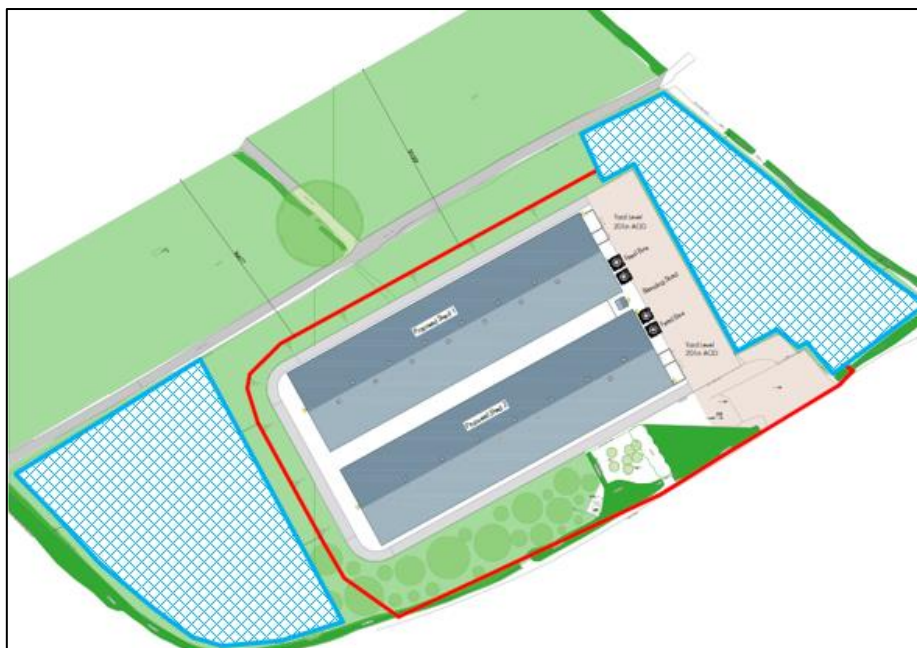
The vegetative buffer should comprise a 12m intake zone of Willow (*Salix* sp.), Hawthorn and Silver Birch (*Betula pendula*) nearest to the proposed poultry sheds, followed by a 10m recapture zone of Norway Spruce (*Picea abies*), Leyland Cypress (*Cupressus × leylandii*), Sycamore, Ash and Poplar (*Populus* sp.) and then an 8m backstop zone of dense Hawthorn, Hazel and Holly. Willow and Poplar are quick to establish and rapidly provide a filtering and stabilising effect (Townsend & Atkinson, S., 2012) whilst Norway Spruce and Leyland Cypress will provide year-round pollutant scrubbing and their complex leaf shape is effective at capturing particulates emitted by the poultry shed fans (Malone, G., VanWicklen, G., and Collier, S., 2011). A short section of the tree planting will reduce in width down to 28m at the north-eastern end of the proposed development site where this is the maximum width available between the hardstanding yard and field boundary hedgerow. To compensate for this short reduction in width the buffer will measure 32m towards the south-eastern end of the proposed development site making an average minimum width of 30m across the tree buffer in Field 2.

Adrizal et al (2008) showed that a 30m buffer of trees of similar species composition as outlined above, can significantly decrease Ammonia with their study recording a reduction from 12.01ppm at source to 0.31ppm 30m from source through a vegetative tree buffer.

The proposed newly planted areas would create approximately 0.67 hectares of additional habitat that would provide additional habitat for a variety of plant and animal species as well as limiting ammonia deposits from the poultry units on designated and ancient woodland sites within 5 km of the proposed development site.



Figure 5. Proposed mitigation plan (blue hatched area indicates proposed tree planting)



## 4.3 Habitats

### 4.3.1 General

The construction area for the poultry sheds and associated hardstanding yard will affect improved grassland, hardstanding and a section of hedgerow. In addition, three trees will be removed along the lane leading to site in order to create a passing place and suitable visibility splay.

### 4.3.2 Mitigation

The construction works will affect ecologically poor improved grassland and hardstanding and the loss of these areas are unlikely to have a significant negative impact and specific mitigation measures for this loss are not considered necessary.

The proposals will also affect an approximate 85m length of BAP habitat hedgerow and three trees of higher ecological value and specific mitigation measures are required to compensate for this loss. The existing boundary hedgerows will be planted up to create dense, continuous field boundary hedgerows with the exceptions of the access gateways. Hedgerow planting should comprise native broadleaved species including a mix of Hawthorn, Blackthorn, Holly, Hazel, European Spindle (*Euonymus europaeus*), Dog Rose, Honeysuckle (*Lonicera periclymenum*), Elder, Field Maple and Dogwood (*Cornus sanguinea*).

Hedgerows should be double planted with six plants per metre; mulchings or weed suppressing mats should be used to aid good establishment of woody species. Plants should be 80 – 100 cm bare root

whips (1 + 1), planted between November and March and staked and protected with a bio-degradable treeguard to prevent pest damage.

All new hedgerow and tree planting will be monitored for a minimum of 5 years to check establishment and if die-back or failure to establish occurs then re-planting will be required. Re-planting will replace the original species and be of a similar size. Once established (probably when first laid) the tree guards should be removed. The preferred after-care for all new hedges is for them to be laid when they are between 7 and 10 years old, depending on the rate of establishment.

The planted-up field boundary hedgerows and additional tree planting, as recommended, will compensate for the loss of the 85m length of BAP habitat hedgerow and the three trees along the lane leading to site.

The proposed areas of groundworks will need to be confined to areas that will not impact on the root systems of the existing and retained boundary trees. An appropriate buffer (as detailed in BS5837:2012) will need to be established.

## **4.4 Protected Fauna**

### **4.4.1 General**

A disused bird's nest (possible Corvid or Buzzard) was noted within a mature Oak to the north of the proposed development footprint. No further evidence of protected species was confirmed within or immediately adjacent to the proposed development footprint during the survey but there are habitats with suitability for Badger, bats, nesting birds, Great Crested Newt and reptiles within or adjacent to the proposed development area.

### **4.4.2 Badger**

No setts or definitive evidence of foraging or commuting Badger was recorded on or adjacent to the proposed development site although mammal tracks were noted entering the north-western and south-eastern field boundaries.

The lack of evidence of Badger on site suggests the potential for setts to be dug prior to works is unlikely. Due to the relatively small size of suitable foraging habitat affected it is also considered unlikely to be a significant habitat loss for any local Badger populations.

Although significant negative impacts on Badgers are not predicted as a result of the construction of the poultry units and associated access, a pre-works check will be required to ensure no new setts have been created within close proximity to the works. Mitigation measures will also be required to ensure foraging Badgers do not become trapped within any excavation works associated with construction

works. Excavations should either not be left uncovered overnight or ways of escape for Badgers provided (wooden planks or graded earth banks).

#### 4.4.3 Bats

No suitable roosting habitat is located within the footprint of the development however suitable roosting features are present within a mature Ash tree at the end of the lane leading to site and is proposed for removal in order to create a suitable visibility splay. The Ash tree was assessed as having *Moderate* potential for roosting bats and activity surveys are scheduled for summer 2019.

A lighting plan showing the location and specification for any proposed lights on the site will be produced and will reflect the Bat Conservation Trust Bats and Lighting in the UK guidance (2018). The lighting plan will include directing lighting away from the retained boundary hedgerows and trees and away from any new roosting provision. In addition, lighting will be directed away from the farm buildings to the south of site and downlighting will be used to ensure that suitable roosting features and foraging and commuting habitats remain unlit.

Long term bat roosting provision should be incorporated into the proposals and should include a minimum of two Schwegler 2F bat boxes, or equivalent, installed on retained mature trees around the field boundaries and one Schwegler 1FS, or equivalent to be installed on a retained semi-mature tree at the end of the lane adjacent to the Ash and Alder proposed for removal (*Figure 6*).

Predicted impacts on commuting and foraging routes as a result of the removal of 85m of hedgerow and three trees along the lane leading to site are anticipated to be negligible and mitigation and enhancement for bats include the planting up of the field boundary hedgerows and planting of additional trees around site to improve the quality of foraging habitats as well as connectivity with the wider landscape.

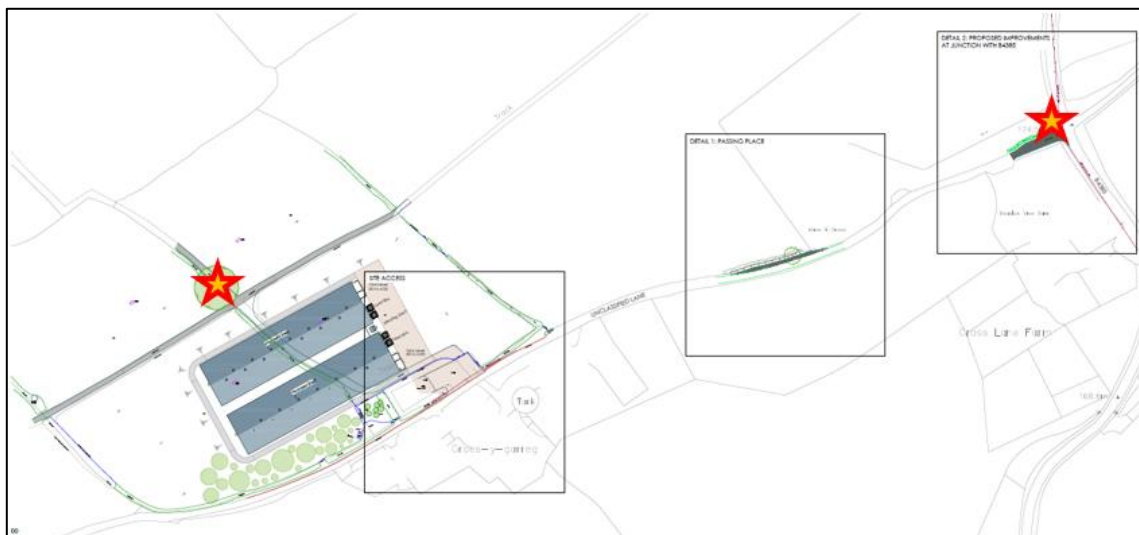
#### 4.4.4 Nesting Birds

The boundary hedgerows and trees around the field boundaries are suitable habitats for nesting birds and an old nest was noted within a mature Oak to the north of the development footprint. Given the habitat types present on site it is considered extremely unlikely that any *Schedule 1* breeding birds would be present within the proposed development footprint but the site is suitable for hunting Barn Owl and the mature Oak to the north of the development footprint provides suitable habitat for nesting Red Kite although this will not be directly affected by the proposals.

The proposed construction of the poultry sheds will affect an approximate 85m length of hedgerow and three trees on the lane leading to site, all of which are suitable nesting habitat. Works affecting suitable nesting habitat will be completed outside the bird nesting season (March to August inclusive) or, if this is not possible, after a survey by an experienced ecologist. Hedgerow netting is not to be used.

Any habitat creation, enhancement and management, such as the planting up of boundary hedgerows and planting of trees, would only have a positive impact on nesting birds at the site. A combination of

Figure 6. Bat and bird box locations (indicated by red stars)



There are no apparent records of Great Crested Newt within 2 km of the proposed development site and no ponds are located within 500m of the proposed development site.

Taking in to consideration the distance between the construction areas and nearest record of Great Crested Newt, the absence of suitable breeding ponds within 500m of site and the area of habitats affected by the proposals, it is considered very unlikely that the proposed development will affect this species.

#### 4.4.6 Reptiles

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corner of Field 2. The improved grassland and hardstanding that dominates the development footprint is of limited suitability for reptiles due to the lack of cover but could be crossed during dispersal.

Mitigation measures should be adhered to avoid killing or injuring reptiles. These methods should include habitat modification (*e.g.* cutting and maintaining the vegetation to just above ground level prior to works) to discourage reptiles from occurring within the footprint of works. The hedgerow clearance and any clearance of the piles of agricultural materials within Field 2 should be undertaken when reptiles are active (March to October inclusive) and under watching brief by a suitably experienced ecologist.

During construction, materials should be stored on pallets to prevent reptiles, if accessing the site, from being crushed when they are moved and excavated earth on the site should be kept to a minimum and away from the boundaries to deter reptiles from using it for temporary cover.

## 5 LEGAL PROTECTION

This section briefly describes the legal protection afforded to the protected species referred to in this report. It is for information only and is not intended to be comprehensive or to replace specialised legal advice. It is not intended to replace the text of the legislation, but summarises the salient points.

### 5.1 Badger

Badger is protected in Britain under the *Protection of Badgers Act 1992* and *Schedule 6* of the *Wildlife and Countryside Act 1981* (as amended).

The legislation affords protection to Badgers and Badger setts, and makes it a criminal offence to:

- wilfully kill, injure, take, possess or cruelly ill-treat a Badger, or to attempt to do so;
- interfere with a sett by damaging or destroying it;
- to obstruct access to, or any entrance of, a Badger sett; or
- to disturb a Badger when it is occupying a sett.

### 5.2 Bats

All species of British bat are protected by *The Wildlife and Countryside Act 1981* (as amended) extended by the *Countryside and Rights of Way Act 2000*. This legislation makes it an offence to:

- intentionally kill, injure or take a bat;
- possess or control a bat;
- intentionally or recklessly damage, destroy or obstruct access to a bat roost; and
- intentionally or recklessly disturb a bat whilst it occupies a bat roost.

Bats are also European Protected Species listed on *Schedule 2* of the *Conservation of Habitats and Species Regulations 2010 (SI 2010/490)* under *Regulation 41*. This legislation makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats in such a way as to be likely to (a) impair their ability to: (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; and
- damage or destroy a breeding site or resting place of a bat; and
- possess, control, transport, sell, exchange a bat, or offer a bat for sale or exchange.

All bat roosting sites receive legal protection even when bats are not present.

Where it is necessary to carry out an action that could result in an offence under the *Conservation of Habitats and Species Regulations 2010 (SI 2010/490)* it is possible to apply for a European Protected

Species (EPS) licence from Natural England (NE). Three tests must be satisfied before this licence (to permit otherwise prohibited acts) can be issued:

- Regulation 53(2)(e) states that licences may be granted 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.”
- Regulation 53(9)(a) states that a licence may not be granted unless “there is no satisfactory alternative”.
- Regulation 53(9) (b) states that a licence cannot be issued unless the action proposed “will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range”.

### 5.3 Dormouse

The Dormouse is on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receives full protection under *Section 9*. This species is also listed as European Protected Species on *Schedule 2* of the *Conservation of Habitats and Species Regulations 2010 (SI 2010/490)* which gives them full protection under *Regulation 41*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the CRoW Act).

Under the above legislation it is an offence to:

- kill, injure or take an individual of such a species;
- possess any part of such species either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by such species for shelter, rest, protection or breeding;
- intentionally or recklessly disturb such a species whilst using any place of shelter or protection; or
- sell or attempt to sell any such species.

Dormouse is included as a Priority Species in the UK Biodiversity Action Plan (UKBAP) and also as a species of principal importance for the conservation of biological diversity in England under *Section 74* of the CRoW Act.

### 5.4 Nesting Birds

All species of bird are protected under *Section 1* of the *Wildlife and Countryside Act 1981* (as amended). The protection was extended by the CRoW Act.

The legislation makes it an offence to intentionally:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.



Certain species of bird are listed on *Schedule 1* of the *Wildlife and Countryside Act 1981* (as amended) and receive protection under *Sections 1(4) and 1(5)* of the Act. The protection was extended by the CRow Act. The legislation confers special penalties where the above-mentioned offences are committed for any such bird and also make it an offence to intentionally or recklessly:

- disturb any such bird, whilst building its nest or it is in or near a nest containing dependant young; or
- disturb the dependant young of such a bird.

## 5.5 Great Crested Newt

Great Crested Newt is listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receive full protection under *Section 9*. These species are also listed as European Protected Species on *Schedule 2* of the *Conservation of Habitats and Species Regulations 2010 (SI 2010/490)* which gives them full protection under *Regulation 41*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the CRow Act).

Under the above legislation it is an offence to:

- kill, injure or take an individual of such a species;
- possess any part of such species either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by such species for shelter, rest, protection or breeding;
- intentionally or recklessly disturb such a species whilst using any place of shelter or protection; or
- sell or attempt to sell any such species.

The Great Crested Newt is included as a Priority Species in the UK Biodiversity Action Plan (UKBAP) and also as a species of principal importance for the conservation of biological diversity in England under *Section 74* of the CRow Act.

## 5.6 Common Reptile Species

Common Lizard, Grass Snake, Slow-worm and Adder are listed under *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), in respect of *Section 9(5)* and part of *Section 9(1)*. This protection was extended by the CRow Act.

Under the above legislation it is an offence to:

- intentionally or deliberately kill or injure any individual of such a species; or
- sell or attempt to sell any part of the species alive or dead.