



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE



PRELIMINARY ECOLOGICAL APPRAISAL

LAND OPPOSITE EYTON SCHOOL

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1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Planning permission will be sought for the construction of six detached dwellings along with a new car park for the nearby primary school, Eyton School. Access to the site will be gained from the B5426 road.

Arbor Vitae were commissioned by Roger Parry and Partners to undertake a Preliminary Ecological Appraisal in order to assess the impact of the development on habitats and protected species.

1.2 SCOPE OF SURVEY

The survey is primarily designed to:

- Identify and record habitats and important ecological features on site;
- Evaluate the potential of the proposed development site to provide opportunities for protected species;
- Determine any likely impact which the development and landscape proposals may have on these.
- Identify opportunities for the enhancement of habitats and biodiversity features on site.

1.3 KEY PRINCIPLES

All ecological surveys conducted by Arbor Vitae Environment Ltd are underpinned by the following key principles, as outlined by CIEEM (2018):

Avoidance - Seek options that avoid harm to ecological features (for example, by locating on an alternative site).

Mitigation - Adverse effects should be avoided or minimized through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed – for example, through a condition or planning obligation.

Compensation - Where there are significant residual adverse ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures.

Enhancements - Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.

2 SITE DESCRIPTION

2.1 LOCATION, LANDSCAPE, AND BACKGROUND

The site lies on farmland adjacent to the main B5426 road in the hamlet of Eyton, 5 kms to the south of Wrexham.

This a relatively flat landscape and includes large arable fields along with smaller grassland fields.

The site abuts the rear gardens of a number of detached dwellings to the west. On the opposite side of the road to the site are several residential properties and a primary school.

3 SURVEY METHODOLOGY

3.1 DESK STUDY

An initial desk study was composed to gain background information regarding any protected species or designations within the area. The main sources of information were MagicMap, Cofnod (biodiversity records centre) and NBN Atlas.

3.2 SITE SURVEY

A site visit was made on 27/04/2022. The survey was carried out in accordance with CIEEM (2017) best practice guidelines. The objective of the survey was to find and record any signs of use by protected species and to note the habitat features present.

An assessment of the available habitats both on and adjacent to the site led to consideration of the potential of the site for the following protected species:

- Badgers
- Bats
- Breeding birds
- Great Crested Newts

The survey methodology was tailored to evaluate the area for these species in the following ways:

Badger

An area within 50 metres of the site was closely searched for the following signs of badger activity:

- Setts,
- Tracks and footprints,
- Latrines,
- Snuffle holes.

Bats

The site was assessed in terms of its suitability to support bat species. Hedgerow habitat and nearby potential habitat were assessed and recorded and potential impacts from the proposals considered.

Breeding birds

The site was assessed in terms of its suitability to support breeding bird populations. Hedgerow habitat and nearby potential habitat were assessed and recorded.

Great crested newts

A desk study and a ground search were conducted to search for any areas of open water within 250 metres. Waterbodies were then assessed based on the Habitat Suitability Index for great crested newts (Oldham et al., 2000 and ARG UK, 2010).

3.3 PERSONNEL

The survey was carried out by William Prestwood BSc: Ecologist with 40 years' experience.

3.4 CONSTRAINTS

There were no constraints to the survey being carried out in accordance with guidelines.

4 SURVEY RESULTS

4.1 DESK STUDY

The desk study found that within 5km of the site there were the following designations:

Name	Designation	Distance from site
RIVER DEE	SSSI	2.5KMS
The search included Ramsar, SSSI, SAC, SPA, LWS, NNR and LNR. ¹		

In addition, the following Wildlife Sites fall within 1 km of the site with Oak Wood adjoining the site (See Figure 3 for location):

Name	Designation	Distance from site
1. GEFEILIAU	WILDLIFE SITE	720 METRES
2. SALTS WOOD	WILDLIFE SITE	980 METRES
3. YORKES DINGLE	WILDLIFE SITE	500 METRES
4. OAK WOOD	WILDLIFE SITE	ADJACENT

Results from the desk study revealed that within a 1km radius of the proposed development site the following protected/key species have been recorded (see Figure 3):

Species	Distance from site
Badger	Several records within 1 km. Nearest record at 673m
Great crested newt	Several records within 1 km. Nearest record at 614m
Hedgehog	Two records within 1 km. Nearest record at 67m
Bat species	Several records of several species within one km. Nearest record at 360m.

¹ SSSI: Site of Special Scientific Interest, SAC: Special Area of Conservation, SPA: Special Protection Area, LWS: Local Wildlife Site NNR: National Nature Reserve, LNR: Local Nature Reserve.

4.2 HABITATS ON SITE

All habitats are classified using JNCC's Phase 1 Habitat Survey Handbook (JNCC, 2010).

Unimproved grassland

The majority of the site is occupied by species-rich, unimproved grassland. This lies mainly on relatively steep slopes on either side of the valley which forms most of the site. Due to its inaccessibility for agricultural improvement, the grassland has retained a relatively wide range of species. These include cat's ear, pignut, birds foot trefoil, black knapweed, sorrel, cowslip, red campion, mouse ear hawkweed, along with abundant wood sorrel and primrose (both probable survivors from a time when the slopes were wooded or scrub covered).

Semi-improved grassland

The flatter areas of field outside the slopes of the valley have received more agricultural improvement in the past and are relatively species-poor albeit still qualifying as semi-improved.

Rush pasture

Damp grassland areas along the course of the ditch at the foot of the valley are dominated by soft rush. They also support hard rush, carnation sedge and bog stitchwort.

Running water

The ditch along the foot of the valley is fed from a covered drain, the origins of which are uncertain. There was no flow of water at the time of survey (after dry weather) but the ditch clearly carries running water in wetter periods.

Hedgerow

The roadside hedgerow is mainly dominated by hawthorn although small quantities of ash and elder are found.

Individual trees

No individual trees exist within the proposed site itself, but the boundary of the field to the north is marked by a ditch and hedge line along which are a number of mature trees including ash, oak and alder.

4.3 PROTECTED SPECIES

Badgers

Badgers are evidently resident in the local area but there is no evidence of badger activity at the site and no setts within a 50 metre search area.

Bats

There are no features within the red line site which offer roost sites to bats. However, several mature trees lie immediately adjacent to the site. These were closely inspected from the ground using binoculars and at least three mature trees including ash and oak include features such as broken branch stubs, loose bark and cavities which could provide bats with roosting opportunities.

Breeding birds

There are few opportunities for breeding birds to nest within the site other than in the boundary, roadside hedgerow. No nests were observed in the length of hedge needing removal.

Great Crested Newt

GCN are resident at several locations within a 1km radius of the site. However, no ponds were identified within 500m of the proposed development site and therefore no further survey work is required with regard to this species.

5 POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

The unimproved, species-rich grassland is a priority habitat due to its relative scarcity.

The proposed development will inevitably result in a loss of this habitat which would be regarded as a significant negative impact.

The ditch and associated rush pasture provide opportunities for common amphibians and for invertebrates as well as wetland plant species.

Hedgerows with native species are also a priority habitat, although the hedgerow on site is not an 'important' hedgerow as defined by the Hedgerow Regulations. Although only a small section will be removed, this will sever the habitat continuity of the hedge.

The ditch running through the centre of the site feeds a small stream leading through the adjacent Wildlife Site (Oak Wood). The Wildlife Site will not be affected directly by the proposals but general disturbance from noise and increased illumination, along with possible changes to water flows, could have impacts on the site.

5.2 PROTECTED SPECIES ASSESSMENT

Badger

The survey revealed no signs of use by badger and there are no historic records of badger at the site. The proposals will have no impact on this species.

Bats

Although no trees will be removed and therefore no potential bat roost sites impacted, any increase in exterior lighting associated with houses could alter bats behaviour and reduce the value of these trees as roost sites.

Breeding birds

Loss of a section of hedgerow diminishes nesting opportunities for birds but otherwise there is little impact of bird habitat.

Other key species

The loss of areas of scrub and flowering plants within the grassland will lead to a reduction in the amount of nectar available to pollinator species. This may lead to a reduction in the number of invertebrates on site and therefore a lack of food for birds and other wildlife, causing an overall loss of biodiversity at the site.

Hedgehogs could be using the site as the habitats available present suitable opportunities for feeding, breeding and hibernating. The species has been recorded locally. The European hedgehog is a Species of Principal Importance under section 41 of the Natural Environment and Rural Communities Act 2006. Hedgehog are a priority species in the UK due to a decline in the amount of suitable habitat available to them through the development of land.

Other wildlife to consider includes common and widespread amphibians which could be using the site.

Whilst there is no legal obligation to avoid injury/harm/disturbance to these animals, they should be considered as an important part of the landscape and every precaution should be taken to minimise the impact that the proposed development may have upon them.

6 AVOIDANCE, MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

No mitigation for the loss of the species-rich grassland, ditch or rush pasture is possible on site. Compensation for this loss would need to be found off-site or through commuted sums made available to other agencies for nature conservation.

6.2 PROTECTED SPECIES MITIGATION

Bats

All external lighting for the new houses would need to be kept to a minimum in order to minimise illumination of mature trees which could harbour bat roosts. Any artificial lighting will need to be designed with nocturnal wildlife in mind. The following measures should be incorporated into lighting plans for the site:

- Hedgerows and key habitat features including mature trees on the site will not be illuminated in order to retain dark movement corridors for nocturnal wildlife. Illuminance along these features should be below 0.2 lux on the horizontal plane, and 0.4 lux on the vertical plane.
- Security lighting will be set on motion sensors with short timers (<1 minute) and should be LED lighting.
- External lights will be hooded and directed toward the ground to reduce upward light spill.
- A warm white spectrum will be adopted throughout the scheme to reduce blue light component (<2700Kelvin).
- Luminaires will always be mounted horizontally with an upward light ratio of 0%.
- Where lighting is needed to illuminate paths/walkways, low level LED bollard lighting, set on motion sensors should be used to avoid light pollution about 1m from the ground.

Breeding birds

If any hedgerow removal is necessary, a thorough inspection of the section of hedgerow should be carried out to check for breeding birds it works start between 1st March and 31st August (inclusive).

Other

The following measures should be implemented to decrease the likelihood of killing/injuring small animals such as amphibians and hedgehogs:

- If piles of rubble, logs, bricks, other loose materials or other potential refuges are to be disturbed, this should be done by hand and carried out during the active season (March to October) when the weather is warm to allow animals to disperse naturally.
- The grassland areas should be kept short prior to and during construction to avoid creating attractive habitats for wildlife.
- All building materials, rubble, bricks and soil must be stored on raised platform (e.g. wooden pallets) to prevent their use as refuges by wildlife.
- Where possible, trenches should be opened and closed in the same day to prevent any wildlife becoming trapped. If it is necessary to leave a trench open overnight then it should be provided with a means of escape in the form of a shallow ramp. Any open pipework should be capped overnight. All open trenches and pipework should be inspected at the start of each working day to ensure no animal is trapped.
- Any common reptiles or amphibians discovered should be allowed to naturally disperse. Advice should be sought from an appropriately qualified and experienced ecologist if large numbers of common reptiles or amphibians are present.
- If a great crested newt is discovered at any stage, then all work must immediately halt and an appropriately qualified and experienced ecologist and Natural England (0300 060 3900) should be contacted for advice.

6.3 ECOLOGICAL ENHANCEMENT

The loss of hedgerow will need to be compensated for by the planting of additional hedgerows on the boundary of the site. These should be of native species.

In order to provide shelter, breeding and hibernating opportunities for a variety of wildlife, we recommend that a nest box scheme is adopted as follows:

- Three Woodcrete general purpose bat boxes, suitable for crevice-dwelling species should be installed into mature trees within the boundary hedgerows. No lighting should be installed in the vicinity of the boxes. They should be at least 3m from the ground and face south or south west.
- Two Woodcrete cavity nesting bird boxes with 28mm or 32mm access holes. These should be positioned within mature trees on the boundary of the site and the access should face away from the prevailing wind.
- Two hedgehog domes should be installed into the base of the hedgerow to the north of the development area with their entrances facing into the centre of the hedgerow.

- Four insect ‘hotels’ should be positioned around the site in a variety of places including full sun and shady damp areas beneath trees or hedges. The hotels should be positioned within the vicinity of flowering plants to provide food for butterflies and bees. The hotels should be no less than 50cmx50cm in size to ensure sufficient space to accommodate a variety of invertebrates who would otherwise take refuge in scrub or grassland.

7 SUMMARY

Planning consent will be sought for the construction of six new houses on land adjacent to the B5426 road at Eyton. Provision will also be made for the construction of a new school car park.

The development site will occupy part of a small grass field which currently forms a shallow valley with a central ditch. The proposals will result in the loss of an area of permanent, unimproved species-rich grassland and a watercourse with associated rush pasture. Species-rich grassland is a priority habitat and the loss of this habitat, albeit on a limited scale, is a significant negative impact.

A small length of native hedgerow will be removed to create access.

The watercourse leads to a stream which forms part of the adjacent Wildlife Site known as Oak Wood and, although there will be no direct impact on this site, the location of houses in close proximity to this site could have a negative impact.

No protected species are recorded from the site and no impact on badgers, bats or great crested newts is anticipated. However, mature trees near to the site possess features which could be used by roosting bats and these would be susceptible to increased disturbance for light pollution.

The loss of a length hedgerow may have an impact on breeding birds. Hedgehogs have been recorded close to the site and are likely to be using the site for foraging.

No mitigation is possible on site for the loss of species-rich grassland and off-site compensation works would be necessary. Certain biodiversity enhancements are recommended to provide additional opportunities for birds, bats, hedgehogs and other species on the site.

8 REFERENCES

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FIGURE 1 LOCATION. 1:50,000

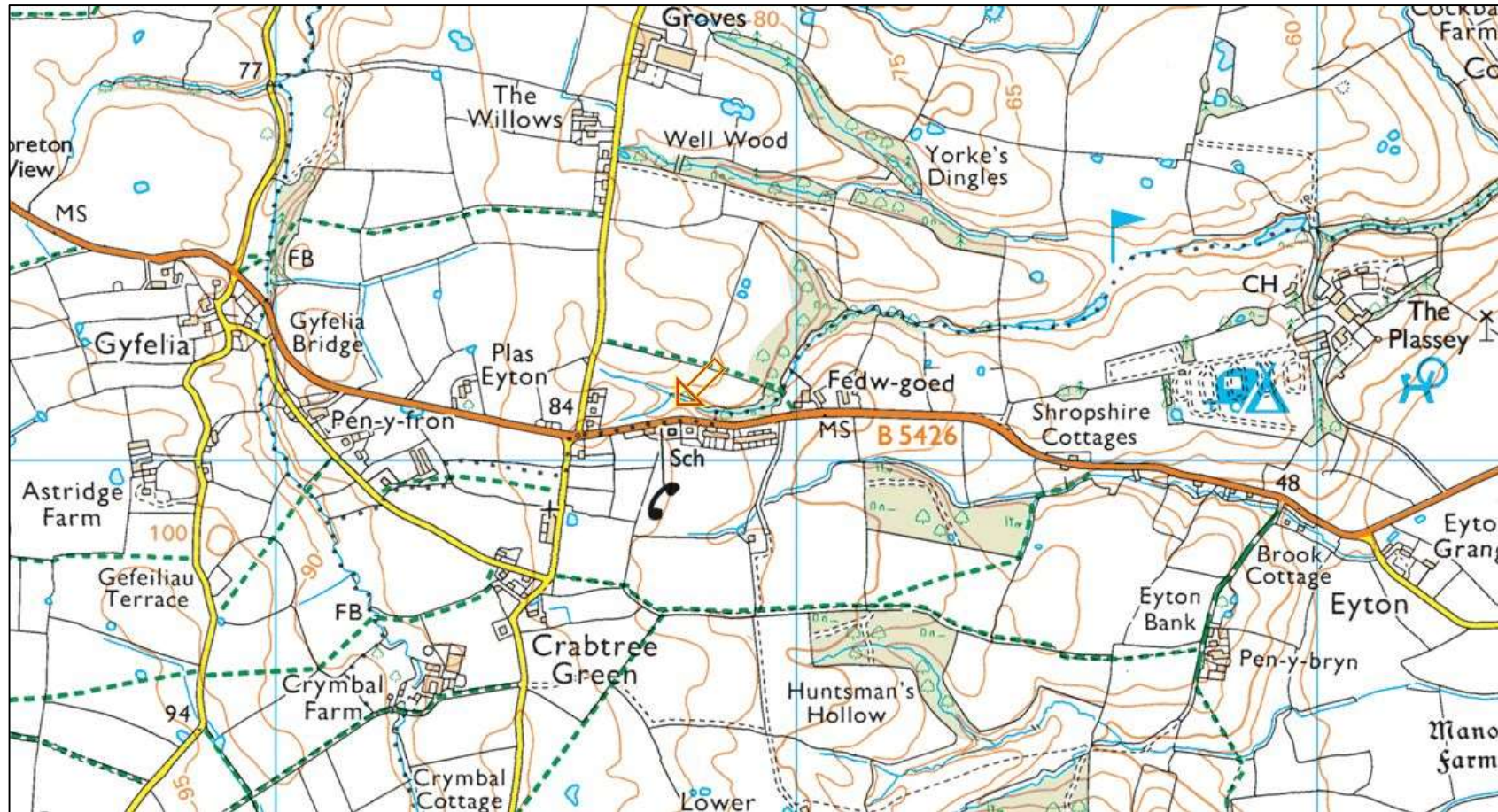


FIGURE 2 AERIAL PHOTOGRAPH

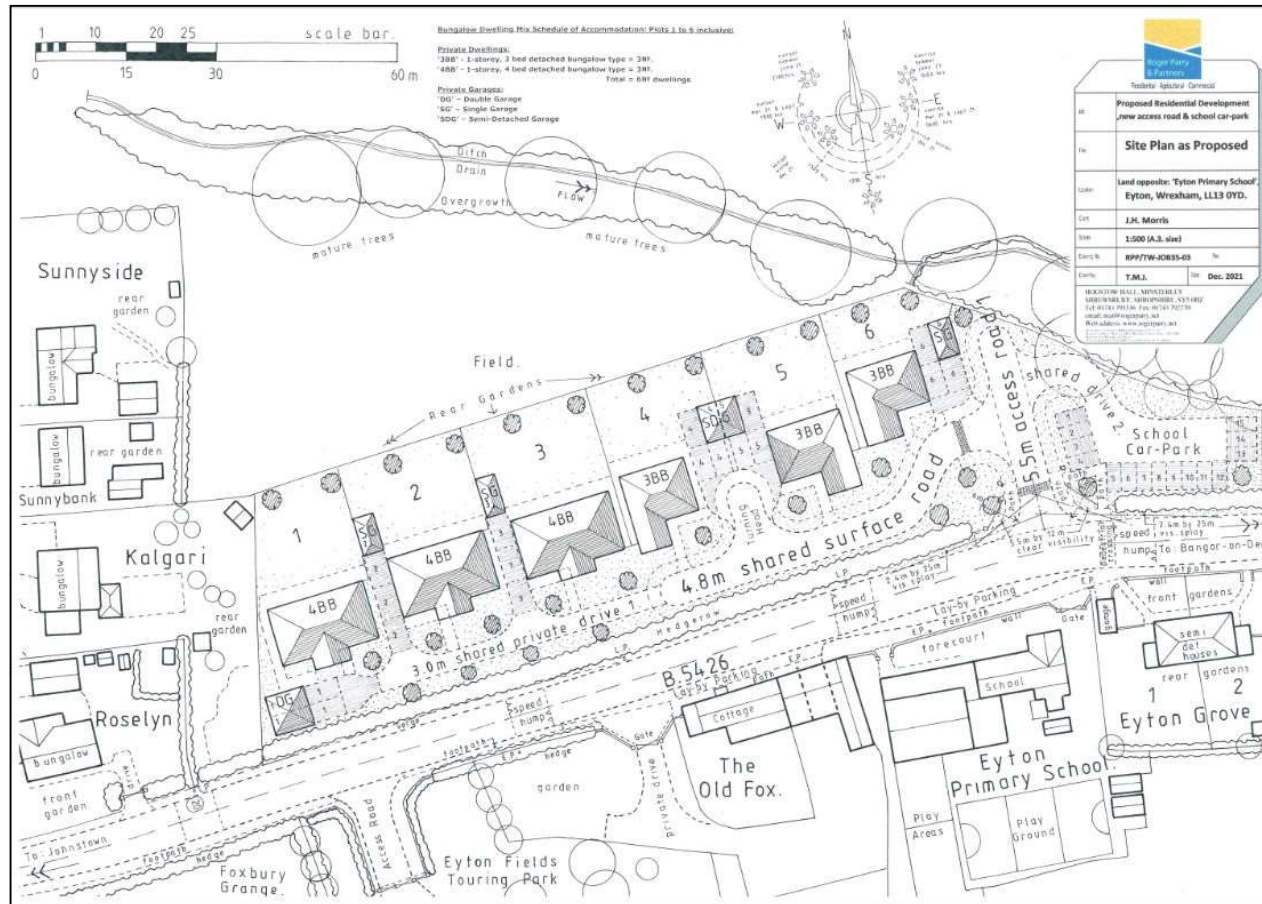
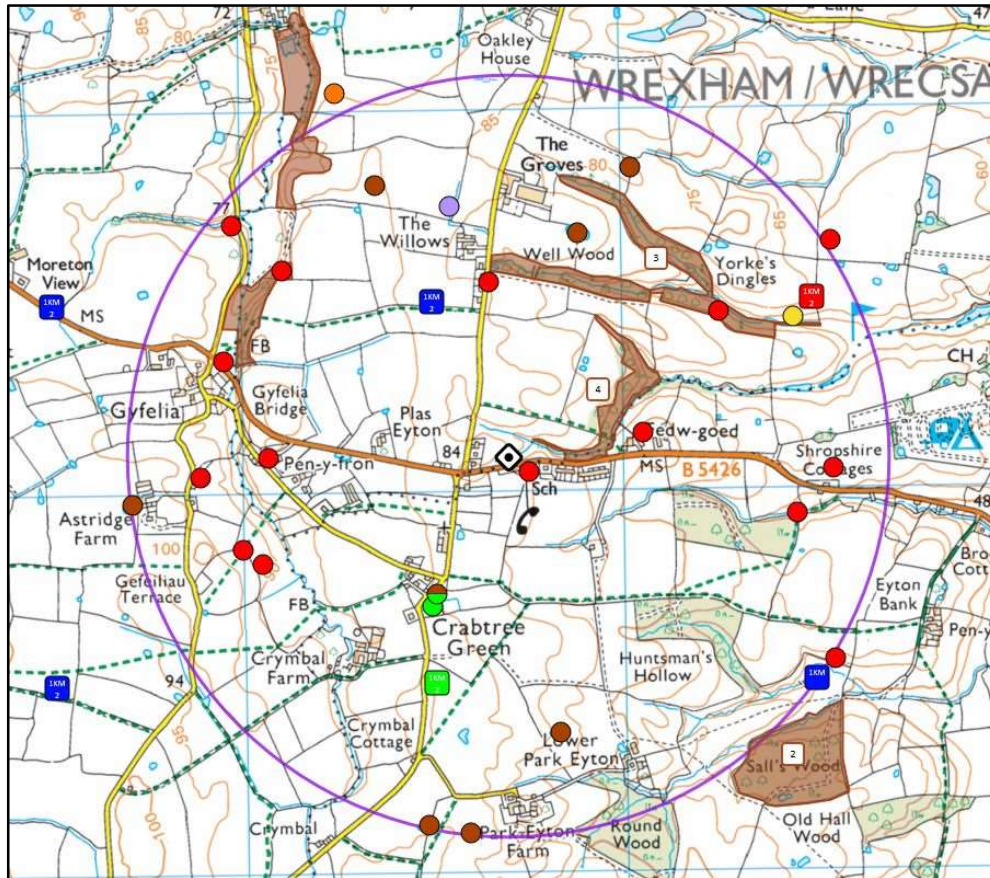
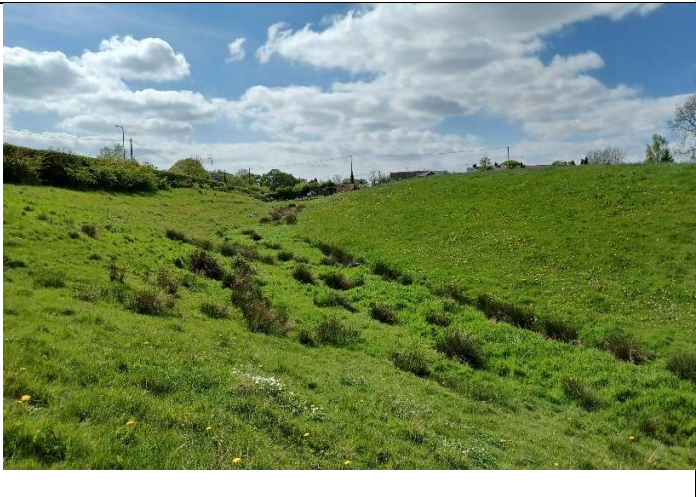


FIGURE 3 ECOLOGY DATA MAP



BROWN AREAS: WILDLIFE SITES. RED DOTS: MAMMAL RECORDS. BROWN DOTS: AMPHIBIAN RECORDS

APPENDIX 1 PHOTOGRAPHS

	VIEW ACROSS SITE FROM WEST SHOWING VALLEY WITH CENTRAL DITCH
	VIEW ACROSS SITE FROM EAST



	ROADSIDE HEDGEROW
	VALLEY TO NORTH OF SITE WITH DITCH, SCRUB AND MATURE TREES
	AS ABOVE

