

Preliminary Ecological Appraisal (PEA)

Project: Land at Stone Bridge House, Eyton, Wrexham, LL13 0SP

Client: S Pritchard

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EXECUTIVE SUMMARY

The contents of this report detail the findings of a Preliminary Ecological Appraisal (PEA) undertaken January 2021 at Stone Bridge House, Eyton, Wrexham, LL13 0SP (hereafter referred to as 'the site'). The site is centred on approximate Ordnance Survey Grid Reference (OSGR) SJ 35580 45648. The findings of this report have been used to inform the proposed construction of a field shelter, a stable, a 25m x 40m menage.

The application site, set in a rural environment, is composed of semi-improved grassland of short sward, hedgerow, defunct hedgerow, scattered trees and fencing (**Plan 1**).

Three significant standing waterbodies were identified during the desktop study, within a 250m zone of influence. The site is deemed to provide poor-quality terrestrial habitat for great crested newts (*Triturus cristatus*; GCN). Records for GCN, were returned within 1km of the site. No further survey(s) with regard to GCN is required presuming presence nearby this species is not considered a constraint to the proposals providing reasonable avoidance measures are adhered to during the build and then long-term conservation management is adhered to.

The site provides poor-quality reptile habitat and displays poor connectivity to the wider landscape. No further survey(s) regarding reptile species is required and reptiles are not considered a constraint to the proposals.

Evidence of previous nesting birds was noted in the boundary trees and hedges.

No evidence of bat roosting was discovered but several of the Oak trees bordering the site contained potential roost features which could be utilised by bat species.

Evidence of badger using the site was noted, in the form of paths crossing the site, however no badger setts were discovered on or near the site, reasonable avoidance measures will be adhered to.

No evidence of other protected/ notable species was noted during the survey and no adverse impacts upon species or habitats of ecological importance are envisaged, provided the provisions detailed within this report are adhered to.

1. INTRODUCTION

1.1 COMMISSION AND PROPOSALS

- Pearce Environment Ltd were commissioned to undertake a Preliminary Ecological Appraisal (PEA) at Stone Bridge House, Eyton, Wrexham, LL13 0SP (hereafter referred to as 'the site'). The site is centred on approximate Ordnance Survey Grid Reference (OSGR) SJ 35580 45648. (hereafter referred to as 'the site').
- The findings of this report have been used to inform a planning application for the proposed construction of a menage, stables and field shelter. (**Appendix 1**).

1.2 AIMS

- This report sets out the findings of a desk-based study, site-based study, Preliminary Roost Assessment (PRA) undertaken by Pearce Environment Ltd in January 2021.
- The aims of this report are to:
 - i. Determine the habitat types within and immediately adjacent to the boundary of the site in relation to the proposed works footprint;
 - ii. Identify habitats and species constraints pertinent to the proposals, in accordance with statutory legislation and guidance given in the NPPF¹;
 - iii. Detail the requirement of any additional Phase 2 species surveys, where necessary;
 - iv. Detail any mitigation and compensation schemes, Reasonable Avoidance Measures (RAM's) and/ or licensing requirements, where necessary; and
 - v. Identify opportunities for the proposed development to provide enhancements and add to the biodiversity resource within the site, in accordance with Section 6 under Part 1 of the Environment (Wales) Act 2016.

1.3 BACKGROUND

- There are no known previous/ historical ecological reports relating to the application site itself.

¹ Department for communities and Local Government (2019). National Planning Policy Framework.

2. METHODOLOGY

- This section summarises the methodologies used during the ecological studies undertaken to inform the proposed development, in line with the aims set out in **Section 1** of this report.

2.1 DESK STUDY

- The desk study is an important part of the ecological assessment as it provides contextual information, such as the sites' proximity to designated areas and known records of protected/ notable species (**Table 2.1**).
- This information is used to supplement the findings of a Preliminary Ecological Appraisal (PEA) and Phase 2 species surveys, to assess the potential for the proposals to affect protected/ notable species and designations of conservation concern, and supports the recommendations and conclusions set out in this report.

Table 2.1 Summary of resources used and information requested during the desk study (2021)

Organisation/ Resource	Information Assessed (search distance from site boundary)
MAGIC website ²	• International statutory designations (1km) • National statutory designations (1km) • Significant standing water bodies (250m)
North Wales Environmental Information Service (COFNOD)	• Protected/ UK BAP species records (1km) • Non-statutory designations (1km) • International statutory designations (1km) • National statutory designations (1km)
Freely-available online data sets (LERC Wales Aderyn ³)	• Protected/ UK BAP species records (1km)

- All pertinent information obtained during the desk study is referenced within **Section 3**, **Section 4**, **Appendix 3** and **Appendix 4** of this report.

2.2 PRELIMINARY ECOLOGICAL APPRAISAL (PEA)

- This level of survey does not aim to provide a complete floral and faunal inventory present on site but to identify field signs of, or habitats with the potential to support, protected species, thereby determining the need for further species survey(s).
- The main habitat types and plant species present were identified and mapped in **Plan 1**, summarised in **Section 3** and illustrated using photographs included within this report, according to the guidelines set out by the Chartered Institute of Ecology and Environmental Management (CIEEM)⁴.
- The survey was performed by Tristram Pearce MRSB, MCIEEM, an ecologist with over 20 years' experience and holder of many species licenses.

² Multi-Agency Geographic Information for the Countryside website (www.magic.gov.uk/)

³ Aderyn. LERC Wales' Biodiversity Information & Reporting Database (<http://aderyn.lercwales.org.uk/public/search>)

⁴ CIEEM (2013). Guidelines for Preliminary Ecological Appraisal. Technical Guidance Series, 1-8.

- The survey was undertaken during a daytime visit on 7th January 2021. This visit was carried out at a temperature of -4C and in dry and frosty conditions.

2.3 SPECIES SURVEYS

Bats

Preliminary Bat Roost Assessment: Built Structures

- A daytime assessment of all built structure(s) on the site to be affected was undertaken to determine their potential to support roosting bats. All external features considered potentially suitable for bats were identified and assessed. An internal assessment of all accessible areas (including loft spaces and basements/ cellars, where appropriate) was undertaken. Signs of bat activity including droppings, feeding remains, scratch marks, staining and urine spots were searched for around all accessible areas. The potential suitability of the structures investigated was assigned a rating of low-to-high in accordance with section 5.2 of the Bat Conservation Trust's *Good Practice Guidelines*⁵ (Appendix 3).
- Recommendations for further survey requirements are based on guidelines summarised in Table 7.3 of the Bat Conservation Trust's *Good Practice Guidelines*.

Foraging/ Commuting Assessment

- The suitability of the site for foraging and commuting bats was assessed, based on the presence/ absence of potential foraging/ commuting habitats such as trees/ woodland, hedgerow(s), grassland and watercourses/ waterbodies. Connectivity to the wider landscape was evaluated.

Great Crested Newts

- A desk-based study was undertaken using OS maps and online mapping resources to identify any waterbodies within 250m of the site boundaries.
- Three standing waterbodies were found within 250m of the site, no further survey or Habitat Suitability Index (HSI) assessment with regard to great crested newts was undertaken owing to lack of access.

⁵ Collins J. (Ed.) (2016) Bat Surveys for Professional Ecologist: Good Practice Guidelines (3rd Ed.) The Bat Conservation Trust, London.

Nesting Birds

- An internal and external assessment of any built structure(s) to be affected on the site was undertaken by an experienced ecologist, to identify the presence of habitat/features suitable for nesting birds.
- A search for active/ disused bird nests was undertaken, where appropriate. Observations of birds flying on or around the site were also noted.

Reptiles

- A thorough site walkover was undertaken to assess the habitat suitability for common reptile species. A terrestrial hand search was carried out during the PEA for reptiles basking or seeking refuge beneath debris. An assessment of the quality of reptile habitat present upon the site was carried out, providing a classification of very poor-to-high.

Badgers

- A thorough site walkover was undertaken to determine the status of badgers (*Meles meles*) and their setts on the site. Where present, an assessment of any sett entrances was made, taking into account the shape of the entrance, the quantity of spoil and freshness of its excavation, the presence of fresh bedding, the presence of badger hair and the presence of badger claw marks. Additional badger field signs such as badger paths, scrapings produced during foraging behaviour, latrines/ dung pits, scratching trees and diurnal resting places were also searched for.

Invasive Weeds

- A search for signs of invasive species of plant including Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*), rhododendron (*Rhododendron ponticum*) and giant hogweed (*Heracleum mantegazzianum*), was undertaken during the PEA.
- Appropriate biosecurity measures were undertaken, where appropriate.

Other Species

- Observations of any other notable flora and fauna were noted during the PEA.

2.4 LIMITATIONS

- January is considered to be outside of the optimal period for undertaking a PEA, therefore it was taken into consideration that nesting birds, roosting bats, active herptiles are likely absent at this time, and vegetation may have died back and/ or be less diverse.
- Whilst we make every effort to meet the client brief, no site visit can ensure prediction of the natural environment such as movement of species in response to variables such as weather and seasonality.
- As with any survey, it is a documentation of what the surveyor observes on the specific survey day and their interpretation of those observations.

3. RESULTS AND RECOMMENDATIONS

3.1 SITE DESCRIPTION

- The application site is set in an urban environment, located north of Eyton and around 4km SE of Wrexham (**Figure 3.1**).



Figure 3.1 Site location (blue pin), reproduced using freely-available online mapping resources (2021)

- The site is directly surrounded by dense agricultural land, dominated by pasture and major A road east (**Figure 3.2**).
- Existing vehicular access is gained directly off A528 to the east (**Image 3.3**).

- The site itself comprises of 1.1 ha / 2.8 acres, but only 0.2ha/0.4 acres will be affected by the proposals.
- The site consists of the short sward semi improved grassland (cut for silage/grazing) and bounded by fencing, hedgerows, scattered trees. The following range of broad habitats are present on the site (**Plan 1**):
 - Semi improved Grassland;
 - Species Poor Hedgerow
 - Defunct Hedgerow
 - Scattered Trees
 - Fencing

Figure 3.2 Aerial view of the site (outlined) and near surrounds, reproduced using freely-available online mapping resources (2021)



Image 3.3 Existing vehicular access leading off A528 main road.



Image 3.4 same access viewed from west.



3.2 BROAD HABITATS

Semi improved Grassland

- The majority of the site consisted of semi improved neutral grassland, dominated by perennial rye grass, false oat grass and tufted hair grass. This mostly is of a very short sward-height due to mowing and grazing, with few herbaceous species present.
- A full list of grass species could not be formulated given the time of year. The species composition and relative abundance of identifiable grasses/ herbaceous species within the sward is detailed below:

Species	Common Name	Scale
<i>Lolium perenne</i>	Perennial rye grass	D
<i>Plantago lanceolata</i>	Ribwort plantain	A
<i>Arrhenatherum elatius</i>	False oat grass	A
<i>Deschampsia cespitosa</i>	Tufted hair grass	A
<i>Rubus fruticosus</i> agg.	Bramble	O
<i>Urtica dioica</i>	Stinging nettle	A
<i>Bellis perennis</i>	Common daisy	A
<i>Trifolium pratense</i>	Red clover	A
<i>Trifolium repens</i>	White clover	A

Fencing

- The site is fenced on all sides, a new post and stock fence is found on the southern boundary dividing what was once one field. On the eastern boundary a post and wire fence exist between the neighbouring property and Hedge 1. To the north a post and wire stock fence occurs by Hedge 2. Hedge 3 and a post and wire fence is found to the western boundary. The south west has a post and rail fence in part along the curtilage boundary of the residential property known as Stone House.

Species poor hedgerows

- Hedgerow 1 - Along the western boundary of the site there was a defunct species poor hedge dominated by hawthorn with occasional holly and oak. AN understorey of ground ivy exists.
- Hedgerow 2 - To the north a machine field hedge 2m high was found to be dominated by hawthorn, with occasional oak. Understorey contained cleavers and ground ivy.
- Hedgerow 3 - The western boundary for most part is 2m high and machine cut, it then gains height part way down and the southern half is more than 3m in height. Dominated by hawthorn with occasional oak trees. Common nettle and cleavers were found in the understorey.
- All the hedges had recently undergone cutting.
- Any suitably-mature trees on the site were subject to a PRA and nesting bird inspection, where appropriate, detailed later in this report.

Scattered Trees

- Oak trees (numbered T1 to T19) of mature stature were found within the boundaries of the site to the north, east and west. Some of these trees contained potential roost features that could support roosting bats and had previous evidence of bird nesting.

Other habitat features

- There is a small depression in the ground to the north of the site, this could be a former pond (long gone) or former quarrying/clay extraction activity. This area contained a small amount of soft rush and water of 50mm depth only covering an area of 2m by 3m. Therefore there is not enough water to be a pond or waterbody to subject it to HSI assessment, merely a wet depression caused by heavy rainfall, common nettle and other dry vegetation in the depression proves it is normally dry.
- There are some piles of branches and arisings from recent hedge cutting/reduction works dotted around the periphery of the site. There is opportunity to utilise these within habitat features on the site.

Image 3.4 General view of the grassland on site



Image 3.5 defunct hedgerow on the eastern boundary



Image 3.6 the northern boundary hedgerow



Image 3.7 Western boundary north west corner



Image 3.8 South western boundary



Image 3.9 Southern boundary with new fence



Image 3.10 Small wet depression in northern boundary



Image 3.11 example of the recently placed arisings /brash piles



3.3 OTHER OBSERVATIONS

- No further observations pertinent to this study were made during the PEA.

3.4 DESK STUDY RESULTS

Statutory Designations

- A desk-based study was undertaken to identify the presence of statutory designations, which include:

International Recognised Statutory Designations

- Special Protection Areas (SPA's)
- Special Areas of Conservation (SAC's)
- RAMSAR Sites

National Recognised Statutory Designations

- Sites of Special Scientific Interest (SSSI's)
- National Nature Reserves (NNR's)

Local Level Statutory Designations

- Local Nature Reserves (LNR's)
- A review of information available from freely-available online resources did not identify the presence of any statutory designations of conservation concern within 1km of the application site (**Figure 3.13**).

Figure 3.13 Proximity of statutory designations to the site, reproduced using freely-available online resources (2021)



- Given the absence of statutory designations within 1km of the application site and considering the sites' suburban location, no negative impacts upon such designations are anticipated as a result of the proposed development.

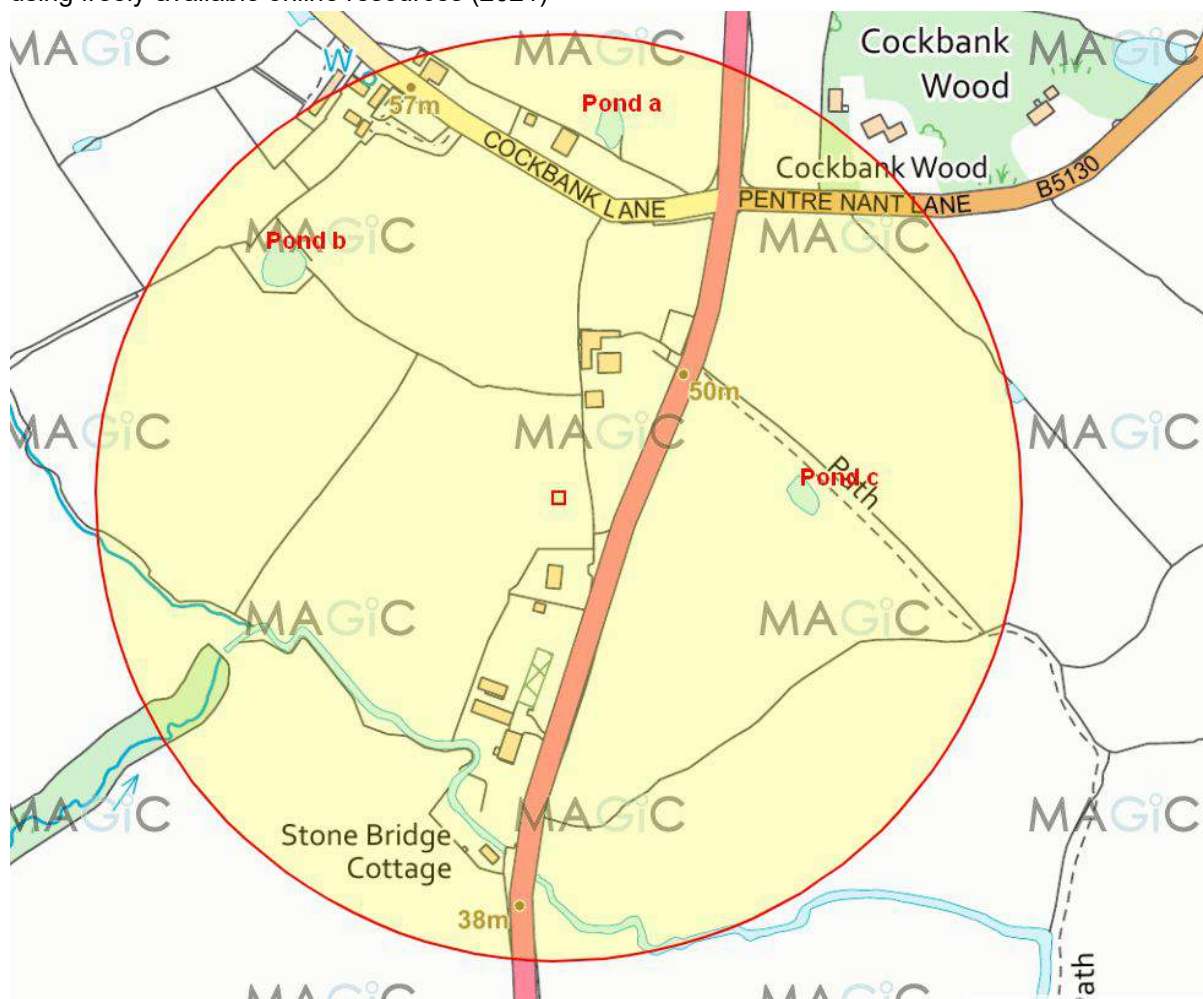
Non-Statutory Designations

- A COFNOD search was not considered necessary given the survey findings, small scale development and low ecological value of habitats present.
- Given the nature of the habitats present upon the application site, and owing to the presence of dense residential housing intervening non-statutory designations from the site, no negative impacts upon designations are anticipated as a result of the proposed development.

Habitats of Importance

- An assessment of the surrounding habitats using OS maps and online mapping resources, in combination with a walkover during the site visit, identified three potential significant bodies of standing water within a 250m zone of influence (**Figure 3.12**).
- No further habitats of importance were identified during the desk study.

Figure 3.14 Proximity of standing waterbodies within 250m of the proposed application site, reproduced using freely-available online resources (2021)



3.5 PRELIMINARY ROOST ASSESSMENT (PRA)

- A daytime inspection was undertaken on the PEA to assess the potential of trees to support roosting bats. Features considered suitable for roosting bats are described and illustrated using site photographs provided below. The other trees not listed below were considered to offer negligible bat roosting potential.

T1 – Mature Oak		
T2 – Mature Oak		
T4 – Mature Oak		
T10 – Mature Oak		
T10 – Mature Oak		

- No evidence of bat use, such as staining, claw marks, bat droppings or feeding remains were evident at the PRF's on ground inspection using binoculars. Only the site side of the trees were available for inspection it should be noted.

Foraging/ Commuting

- The site itself offers some potential (albeit small and limited to boundaries) foraging and commuting habitat for a common assemblage of bat species, given the presence of trees/hedges.

3.6 NESTING BIRDS

- Several inactive bird nests were identified within the trees/hedges on boundaries to the site during the survey, potential nesting opportunities were noted throughout the trees assessed. The nests identified were mostly pigeon and blackbird nests.
- The trees/hedge/scrub on or adjacent to the site are considered to provide overall 'high' bird nesting potential.
- A small number of passerine birds were observed flying over or around the site and within the area during the PEA, including wren, robin, great tit, blue tit, blackbird, jackdaw, pheasant, buzzard.

3.7 SPECIES CONSTRAINTS

- Potential species constraints are detailed below, informed by the findings of the desk study combined with observed field signs or actual presence of protected species identified during the Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA).

Bats

- The majority of trees on/ directly adjacent to the site are considered to provide 'negligible' bat roosting potential. However T1, T2, T4, T10 do offer potential roosting features.
- There are no further structures present upon the site which offer any degree of bat roosting potential.
- The site offers good potential commuting and foraging habitat for common bat species but limited connectivity to the wider landscape.

Legislation

- All species of British bat are listed as a European Protected Species (EPS) on Schedule 2 of the Conservation Regulations (Annex IV (a) to the Habitats Directive) and are afforded full protection under both Regulation 43 of the Conservation of Habitats and Species Regulations (2017) and the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:
 - i. Deliberately capture, injure or kill a bat;
 - ii. Deliberately disturb in a way that would significantly affect their local distribution or abundance, or affect their ability to survive, breed or rear young;
 - iii. Deliberately damage or destroy a bat roost;
 - iv. Possess, control, transport, sell, exchange or offer for sale/ exchange any live or dead bat or part thereof; and
 - v. Intentionally or recklessly disturb bats whilst they are occupying a structure or place which is used for shelter or protection, or to obstruct access to this structure or place.
- Furthermore, several UK bat species are listed as Priority Species on the UK BAP, highlighting them as species of conservation concern.

Impacts

- It is considered that there will be no loss or damage or disturbance to a bat roost and no fragmentation/ isolation of bat foraging and/ or commuting habitat as a result of the proposed development; therefore, no long-term negative impacts on bat species locally are anticipated.

Recommendations

- If trees T 1,2,4 or 10 are to be worked on or taken down then they must be checked for PRFs (Potential Roosting Features) and these features checked by a qualified ecologist prior to tree works.
- No artificial lighting must impact upon these trees.
- Two suitable bat boxes (such as a Schwegler 1FF bat boxes; **Image 3.12**) will be installed upon appropriate trees prior to the completion of works, installed at a height of no less than 4m and orientated in a southerly/ westerly direction. This will ensure enhancement for future refuge opportunities for roosting bats are present. All bat mitigation boxes/ structures must be maintained for the lifetime of the development.

Image 3.12 An example of a Schwegler 1FF bat box



If bat(s) are found at any time, works will immediately halt and an ecologist will be informed.

Great Crested Newt

- A desk-based assessment using OS maps and online mapping resources, in combination with a walkover during the site visit, identified three potential significant bodies of standing water within 250m of the site, as illustrated in **Figure 3.14**.
- Although likely presence of GCN can be assumed within 1km owing to historical records from COFNOD, the suitability of the terrestrial habitat for GCN on the application site is considered to be poor, given domination by semi improved short sward grassland and 'gappy' hedgerows on the boundaries.
- Correspondence from NRW would suggest that the approach of presumed presence nearby along with presumed current conservation status of local population of GCN to be unfavourable, means that proposed works would not required a licence.
- Pond a, is located around 230m north of the application site, it has a previous record (1992) of great crested newt. Access was not forthcoming.
- Pond b, is located 240m west of the application site. Access was not forthcoming.
- Pond c, a pond located 210m east of the application site, it is the other side of the A528, a major barrier for newt dispersal. Access was not forthcoming.

Legislation

- The great crested newt (*Triturus cristatus*) is listed as a European Protected Species (EPS) on Schedule 2 of the Conservation Regulations (Annex IV (a) to the Habitats Directive) and is afforded full protection under both Regulation 43 of the Conservation

of Habitats and Species Regulations (2017) and the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- i. Deliberately or recklessly capture, kill, injure or disturb great crested newt(s);
 - ii. Deliberately or recklessly damage or destroy a breeding or resting place of GCN(s);
 - iii. Deliberately or recklessly obstruct access to a breeding or resting place of GCN(s);
 - iv. Deliberately take or destroy the eggs of a GCN(s);
- Furthermore, GCN(s) are listed as Priority Species on the UK BAP, highlighting them as species of conservation concern.

Impacts

- The proposals cover a small footprint and on poor terrestrial habitat.
- No features of likely breeding habitat are to be affected by the proposals.
- No or hibernation features are to be disturbed.
- It is highly unlikely works will impact upon commuting amphibians as works are confined to the grassland away from vegetated linear features.
- These works are considered highly unlikely to negatively impact upon GCN/ amphibians.

Recommendations

- No further survey(s) with regard to GCN is considered necessary and this species is not considered a constraint to the proposals providing reasonable avoidance measures and enhancements to site are provided and adhered to.
- Works are to follow the Reasonable Avoidance Measures outlined in the appendix to this report and the long-term conservation strategy.
- Works must stop in the event of one or more great crested newts being found and may only resume under the appropriate derogation licence issued by NRW under Regulation 55 of the Conservation of Habitats and Species Regulations 2017 (as amended);
- RAMs include the construction of one-way fencing as an avoidance measure, shown in appendix.
- Works will be overseen by an ecologist and periodic monitoring undertaken this will ensure ecological compliance and used to evidence compliant implementation of the works;
- A biosecurity risk assessment is submitted as an appendix to this report owing to the fact amphibian *chytridiomycosis fungus* has been recorded in nearby Johnstown;
- A long-term conservation management plan is found within appendix to this report.

- Providing the recommendations as outlined are undertaken and adhered to then the overall proposed methodology is suitable for the purposes of proving no likely detriment to the maintenance of the favourable conservation status of the local population.

Wildlife pond creation as enhancement to site:

- We recommend the small depression located at SJ 35527 45701 in the ground to the north of the site is enlarged, dug out by mechanical excavator under the supervision of an Ecological Clerk of Works. This would create a wildlife scrape/pond. The surface area of a wildlife pond should be a minimum of 100m², with a maximum depth of ~1.5m. An asymmetrical profile is recommended (with a sump at one side, with a steep edge on the northern side, and a gentle sloping margin/ shallow area on the southern side). The pond will be allowed to fill naturally with rainwater and also to be naturally allowed to vegetate.
- We recommend careful hand searching (by an Ecological Clerk of Works) of the recent, arising/brush piles prior to removal. These can then be used to create habitat / hibernacula piles at the location of the new pond.

Nesting Birds

- The trees and hedgerows on the site boundaries are considered to provide 'good' bird nesting potential, with disused bird nests found during the survey.

Legislation

- All wild birds, their nests and eggs are protected under Part 1 (Section 1) of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:
 - i. Intentionally kill, injure or take any wild bird;
 - ii. Take, damage or destroy the nest of any wild bird while it is in use or being built;
 - iii. Take, damage or destroy the egg of any wild bird; and
 - iv. To have in one's possession, or control, any wild bird (dead or alive) or egg or any part of a wild bird or egg.
- In addition, further legal protection is afforded to those wild bird species listed on Schedule 1, which prohibits the intentional or reckless disturbance to a bird while it is nest building, or at a nest containing eggs or young, or to recklessly disturb the dependent young of such a bird.

Impacts

- These proposals carry a low risk of disturbing birds during the nesting season, but any clearance of vegetation during nesting season would pose a risk.

Recommendations

- No further survey(s) with regard to nesting birds is considered necessary.
- Any tree or hedge works are to be timed to occur outside the bird breeding season (this is February – August inclusive). In the event that works are required within this time period then inspections for nests should be undertaken immediately prior to the start of any works. Should any active nest be found, works shall cease and a 5m buffer is to be formed until subsequent checks by a suitably-qualified ecologist prove the absence of nesting birds.
- The provision of a minimum of two (2) bird nesting boxes suitable for common passerine bird species is recommended as a general enhancement for the site. We recommend Schwegler 1B boxes, installed at a height of no less than 2m and orientated in a southerly or westerly direction.

Image 3.13 Examples of Schwegler 1B boxes



- Any bird boxes must be retained in perpetuity and their exact location(s)/ specification(s) may be discussed with a suitably-qualified ecologist and alternative options can be considered.

Reptiles

- The site is considered to offer poor reptile habitat, given domination by short grassland.
- The site is also poorly-connected to other areas of potentially favourable reptile habitat.

Legislation

- All species of native UK reptile, including common lizard (*Zootoca vivipara*), slow-worm (*Anguis fragilis*), grass snake (*Natrix helvetica*) and adder (*Vipera berus*), receive some degree of protection under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:
 - i. Intentionally kill or injure any UK native reptile; and
 - ii. Sell, barter, exchange, transport for sale or advertise to sell or to buy any UK native reptile.

It is not an offence under the Wildlife and Countryside Act 1981 to possess these animals.

- Full protection under both the Conservation of Habitats and Species Regulations (2017) and Wildlife and Countryside Act, 1981 (as amended) is afforded to sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*). This makes it an offence to:
 - i. Intentionally kill, injure or take either of these species;
 - ii. Possess either of these species or any part thereof;
 - iii. Intentionally damage or destroy the breeding or places of shelter/ protection of either of these species;
 - iv. Intentionally disturb either of these species whilst occupying a place used for shelter or protection; and
 - v. Sell, barter, exchange, transport for sale or advertise to sell or to buy either of these species.
- In addition, all species of reptile native to the UK are also listed as Priority Species on the UK BAP, highlighting them as species of conservation concern.

Impacts

- These works are considered highly unlikely to negatively impact upon reptiles.

Recommendations

- No further survey(s) with regard to reptile species is considered necessary and reptiles are not considered a constraint to the proposals.

Badger

- During the detailed PEA no badger setts were found.
- Field signs indicating use of the site by foraging/ commuting badger(s) were noted, two badger paths were discovered under the southern boundary fence at SJ 35486 45619 and SJ 35447 45635. These are shown below in Images 3.14 and 3.15 with badger hair caught on the fence wire.

Image 3.14 Badger path under fence to south boundary



Image 3.15 Badger hair caught on barbed wire under fence on badger path at south boundary



Legislation

- Badgers and their setts are specifically protected under the Protection of Badgers Act (1992). This makes it an offence to:
 - i. Wilfully kill, injure or take, or attempt to kill, injure or take, a badger;
 - ii. Possess a dead badger or any part or derivative of a badger;
 - iii. Cruelly ill-treat a badger;
 - iv. Dig for a badger;
 - v. Damage a badger sett or any part of it;
 - vi. Destroy a badger sett;
 - vii. Obstruct access to, or any entrance of, a badger sett;
 - viii. Cause a dog to enter a badger sett; or
 - ix. Disturb a badger when it is occupying a badger sett.

Impacts

- These works are considered highly unlikely to negatively impact upon badgers.

Recommendations

- No further survey(s) with regard to badgers is considered necessary and this species is not considered a constraint to the proposals, providing a reasonable avoidance measures method statement is adhered to.

Other Species/ Habitats

- A record of hedgehog was returned within 1km of the site. The proposals would not negatively impact on the species. The log/brush piles proposed as enhancement would benefit this species.
- Barn owl records were returned within 1km of the site, normally it would be a welcome enhancement to introduce a barn owl nest box to the site as there is lots of scope on mature trees for sighting such a box, but given the close proximity of the site bordering an 'A' road it is considered unsuitable in this location.
- Native hedgerow planting for the southern boundary fence line is recommended. New hedgerow planting should be species-rich and utilise native species of local provenance (**Table 3**).

Table 3 recommended composition for new, native hedgerow planting

Common Name	Scientific Name	Percentage Inclusion
Hawthorn	<i>Crataegus monogyna</i>	60%
Blackthorn	<i>Prunus spinosa</i>	20-25%
Field Maple	<i>Acer campestre</i>	10-15%
Hazel	<i>Corylus avellana</i>	
Holly	<i>Ilex aquifolium</i>	
Elder	<i>Sambucus nigra</i>	5%
Guelder Rose	<i>Viburnum opulus</i>	
Field Rose	<i>Rosa arvensis</i>	
Crab Apple	<i>Malus sylvestris</i>	

- Hedgerow planting should be provided by installing bare rooted stock spaced approximately 30cm apart in two staggered rows to allow six whips per metre, and using supportive canes and biodegradable spiral guards.
- The laying of new hedgerows is recommended after approximately five (5) years, or once woody species have reached suitable maturity. This will improve these features by promoting new growth and a thicker hedge, benefitting a variety of wildlife.
- New, native tree planting should be provided by installing bare rooted stock, evenly-spaced and using supportive canes and protective, spiral guards.
- Newly-planted trees/ hedgerows should be subject to an annual inspection during the winter months (November – February inclusive) and any dead or missing stock must be replaced.
- 'Gapping up' planting of the existing hedges H1 and H2 is recommended, along with hedge laying of any sections that are suitable. This would improve the biodiversity value of the existing hedgerows and ensure longevity.
- No further species pertinent to this study were found and no field signs of other protected or notable species were observed during the PEA.

4. CONCLUSIONS

4.1 SUMMARY OF THE SITE'S ECOLOGICAL SIGNIFICANCE

Table 4.1 Summary of the status of protected/ notable species and sites on and near to the site

Species/ Group	Suitable Habitat on Site	Field Signs	Recommendations
Habitats/ Designations	No:	N/A	Appropriate landscaping scheme for the site is recommended
Invasive Plants	N/A	No	<i>No further action required</i>
Bats	No: Roosting none, but minor potential foraging/ commuting habitat on the site	No: record of Common Pipistrelle within 1km	No further action required but + bat box provision as an enhancement
Nesting Birds	Yes:	Yes:	Avoid nesting season or ECW check + bird box provision as an enhancement
Barn Owl	No	No - records in 1km (closest 85m)	<i>No further action required</i>
Badger	No	Yes – records in 1km	Method statement to be followed
Amphibians (including GCN)	No: 3 waterbodies within 250m, 7 records of GCN within 1km closest is 240m+ poor terrestrial habitat on the site	No	Method statement to be followed.
Reptiles	No: poor habitat on the site, disturbed + poor connectivity to wider landscape	No	<i>No further action required</i>
Otter	No	No	<i>No further action required</i>
Water Vole	No	No	<i>No further action required</i>
Dormice	No	No	<i>No further action required</i>
White-clawed Crayfish	No	No	<i>No further action required</i>

Species/ Group	Suitable Habitat on Site	Field Signs	Recommendations
Other Notable Species	No	No	No further action required

- Subject to the implementation of those provisions, further survey recommendations and working methodologies given in this report, it is considered that any detrimental effects regarding protected/ notable species can be avoided and/ or mitigated for.
- Should the development proposals be altered significantly, such that changes to the working area and/ or duration of the works arise, then a re-assessment of the likely impacts arising by a suitably experienced ecologist will be required.

5. BIBLIOGRAPHY

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Appendix 2 - Great Crested Newt Method Statement

The following sensitive working methodologies are recommended to ensure impacts upon GCN (and common amphibian species) are avoided during the period of the proposed works, temporary one-way amphibian fencing (TAF) is to be used and maintained as fit for purpose throughout the development:

- An experienced Ecological Clerk of Works (ECW) shall be appointed to ensure RAM's are enforced this will include supervision of sensitive works and periodic monitoring to then report back to the LPA and NRW;
- A copy of this method statement and the long term conservation plan must be kept on site;
- Between May and October (with temps above 5c at night) a careful hand search for GCN or other amphibians will be undertaken by the appointed ECW prior to phased strimming of vegetation on the one-way TAF line; The first cut would be to boot height 150 mm, then after 24hrs a second lower cut to ground. This is planned for the northern boundary only where the one way fence will be required, see **plan 3**.
- All fencing, mitigation enhancement creation, newt searches will be supervised by the ecologist.
- Exclusion fence installation will be by an experienced contractor supervised and directed by the ecologist along line cleared of vegetation.
- If any amphibians are located during works by the ecologist then these will be transported in appropriate labelled receptacles with animal welfare as a priority and released under refugia in a timely manner in appropriate habitat at the receptor site, which will be the northern side of the one-way fencing where suitable conditions will be available to support them. Works must stop in the event of one or more great crested newts being found and may only resume under the appropriate derogation licence issued by NRW under Regulation 55 of the Conservation of Habitats and Species Regulations 2017 (as amended).
- The integrity of the fence shall be maintained throughout as advised by the ecologist, this will include inspection for rips/tears/sagging with repairs made immediately, it also includes ensuring no vegetation is allowed to grow up the fence, which could act as a ladder for amphibians.
- Habitat corridors will be maintained to encourage dispersal from the south, west and east to with fencing to the north. The northern hedgerow will be left disturbed and is there to maintain any likely links to wider habitat. Habitat creation includes the planting of a new hedgerow of in the south and native woodland edges with scrub establishment and a new wildlife pond with monitoring of the pond over 4 years from 2022.
- Management will be implemented to achieve long term habitat sustainability and appropriate condition for newt conservation and capable of supporting a range of other species.

- Once the development is complete and the fence is agreed to be removed this will be done under supervision of the ecologist.
- Any excavations will be back-filled on the same day as excavation, or checked by the ECW immediately prior to backfilling;
- A means of escape, such as a wooden ramp, will be provided in all excavations that cannot be backfilled on the same day or alternatively, all excavations should be well-covered with plywood;
- No piles of loose construction materials are to be created during works – all material will be kept on hardstanding, bare soil or stored on pallets, removed immediately from the site or checked by an ECW prior to being removed;
- Contractors are not to handle amphibians unless informed to do so by the ecologist.
- There will be no disturbance or loss to resting places of GCN at any time.

Subject to the implementation of the RAM's described above, no significant impacts upon GCN/ common amphibian species potentially present on site are considered likely to arise.

Appendix 2 - Biosecurity risk assessment

The Chytridiomycosis fungus is known to be present in North Wales. This fungus has affected amphibian populations globally and has caused the extinctions of species. Transmission is via the movement of fungal spores from one water body to another, potentially via equipment used in surveying for amphibians, the movement of amphibians from one site to another for conservation or mitigation purposes and potentially on machinery used to excavate ponds. As a result, the most significant threat is posed by amphibian workers.

A copy of this Biosecurity risk assessment must be kept on site (we suggest having a laminated copy in the site cabin/ compound);

Risk	Transmission	Level of Risk	Consequences	Control Measures
Introduction of the Chytridiomycosis fungus to the amphibian population	Equipment used to catch and transport newts as part of the mitigation programme. Boots of ecologists.	High if the personnel employed to translocate amphibians have been involved in the surveying of ponds on other sites or if equipment has been used on other amphibian sites. Low if there has been no contact by personnel with other amphibian sites	Potential extinction of amphibians on the site	The most effective way of preventing the introduction of the disease is to use 'site specific equipment' If amphibians need to be handled, disposable vinyl gloves should be used. Latex must be avoided as this material is harmful to amphibians. If the ecologists have worked on any other amphibian sites, boots must be sterilised prior to entering the site. The sterilisation process is detailed below.
See above	Machinery used to excavate the new pond as part of the mitigation proposals.	High if plant/machinery has been in contact with water on an infected site, otherwise low.	See above	Disinfect any parts of machinery that are to come into contact with either the new or existing water bodies on the site. This must be carried out prior to entering the site. Ensure that machinery is suitably large so that the vehicle entering the water is not necessary.

Spread of Chytridiomycosis to other amphibian sites in the locality	Infected animals moving to other water bodies in the area.	High if the disease is introduced to the site, otherwise low.	Widespread infection of local amphibian population.	Ensure that the above measures are adhered to.
Introduction of non-native aquatic plants during the stocking phase of the new pond	Aquatic plant material inadvertently brought onto the site in batches of native plants	High if plants are obtained from a disreputable source. Low if plants are sourced from a reputable supplier	Initial dominance of the pond habitats by invasive species to the general detriment of Biodiversity. In the longer term there is the potential for the infestation of aquatic habitats outside the site boundary.	Use only native plants for planting in and around the new pond. Obtain all plants from a reputable supplier who can provide guarantees that no non-native plants are present in the stock.
See above	Plant parts and/or seeds introduced via mud on tools, boots, tyres, plant and machinery.	High if plant/machinery etc have been used in other aquatic environments Low if plant/machinery etc have had no contact with other aquatic environments	See above	All boots, tools, tyres, plant and machinery or any other possible transmission vector must be thoroughly cleaned prior to machinery entering the site.

Appendix 3 – Long term conservation plan

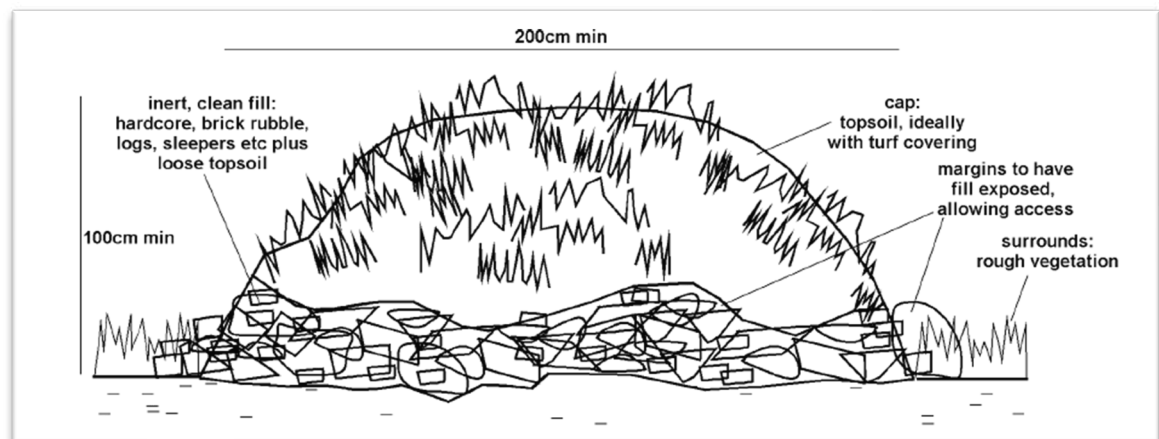
Ongoing land management proposals, and enhancement/creation of new habitats are detailed here.

Retained Areas and Areas of Habitat Creation

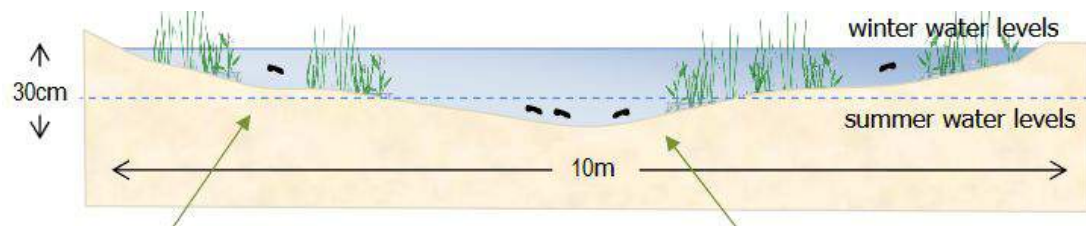
1. The retained areas of habitat and areas of habitat creation, including the wildlife pond, corridor and new hedgerow will be fenced off by a 1.2m high post and wire fencing. Access to livestock not be permitted in these conservation areas, to avoid unsuitable use, damage or undesirable management of those areas.

Habitat Creation

2. The retained areas of habitat include grassland, scrub and hedgerow.
3. Patches of grassland 25m² pockets of the site, namely to the SW and NW are to be retained on site and the current species poor ground flora would be improved upon by over-seeding species rich grassland and encouraging around 30% scrub cover. Initial planting of plugs of guelder rose (*Viburnum opulus*), blackthorn (*Prunus spinosa*) and hawthorn (*Crataegus monogyna*) will be used. All native plants and seeds will, where possible, be of local provenance and sourced from local companies. This will further increase the ecological value of the retained habitats.
4. All plants will be bare rooted whips and will be planted during October– March. Planting holes of sufficient size to accommodate the root ball will be excavated. Compacted soil at the base of the hole will be loosened to aid drainage. Any plant should be planted at a depth so that the root flare is still visible, just breaching the soil surface following backfilling.
5. Adding to this within these two areas a hibernacula, or log piles will be made following guidance from the ecologist, hibernacula are to be created within the retained area of habitat as shown on the Plan. The hibernacula will be created from various sizes of rubble and dead wood, which will, where possible be won from site. A thin layer of topsoil to a maximum depth of approximately 200mm will be placed on top of each hibernacula.

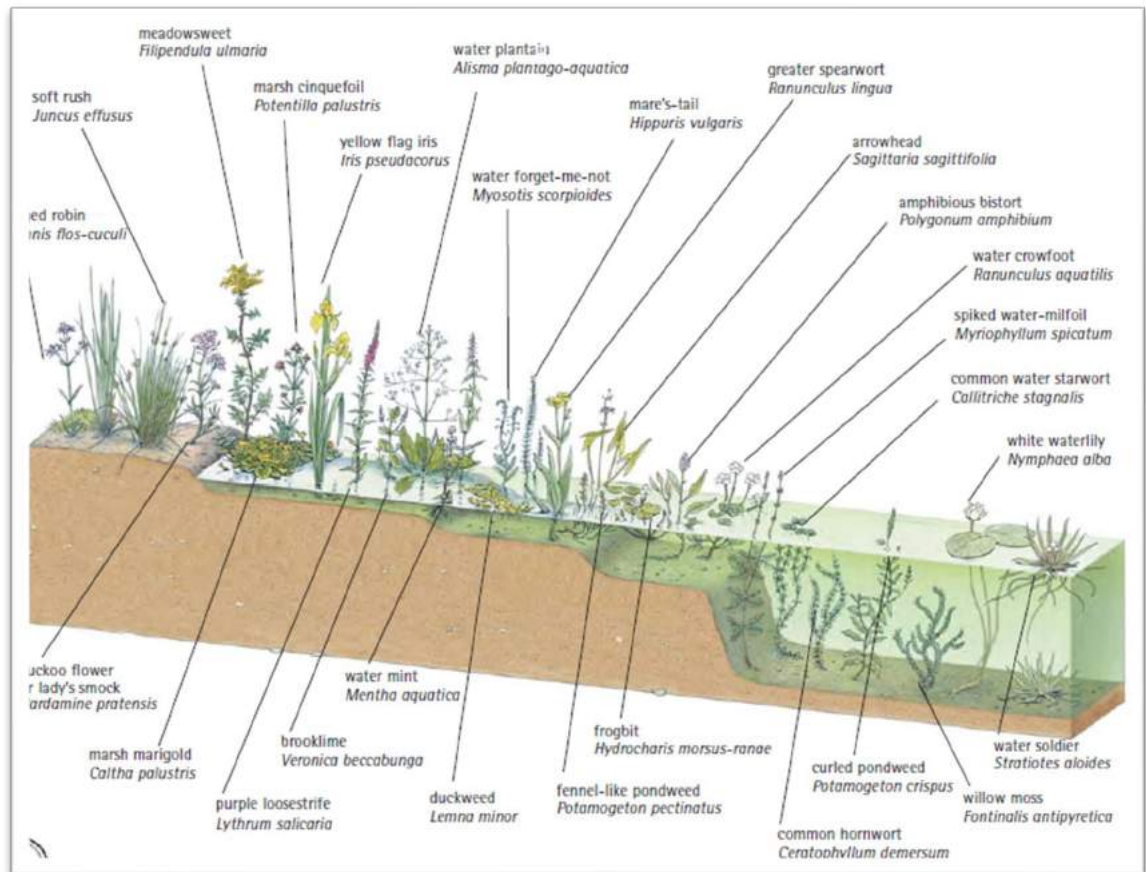


6. Where trees and scrub have been felled previously these will be piled into piles approximately 1m high by 2m in diameter at locations with the receptor areas. These wood piles will provide additional refuge/foraging habitat for GCN, becoming more valuable as they begin to rot down.
7. A new wildlife pond will be created within the northern existing wet depression. This pond will be of an irregular shape with a maximum depth of 1m with gentle sloping sides of 300 mm and 600 mm. The pond will be unlined, utilising the natural clay. The pond will be allowed to naturally fill with water. Owing to the specified depth of the pond being 1m, it is not considered that the pond will suffer unduly from significant levels of evaporation which could lead to the pond drying out completely during an average summer. It is therefore not considered necessary to provide a means of supplying suitable quality water to the pond in the long-term. In addition, this will also allow the pond to dry up in exceptionally dry years, thereby reducing the risk of fish colonising the pond. Submerged aquatic species to be planted will include: spiked water-milfoil (*Myriophyllum spicatum*) and broadleaved pondweed (*Potamogeton natans*). Emergent species will include: floating sweet grass (*Glyceria fluitans*), and yellow flag iris (*Iris pseudacorus*). Marginal species will include: creeping Jenny (*Lysimachia nummularia*), water forget-me-not (*Myosotis scorpioide*) and arrowhead (*Sagittaria sagittifolia*).



Water levels still fluctuate, resulting in a broad drawdown zone. Tadpoles are not trapped and move to the pond centre as water levels drop.

Central pond basin holds water throughout the year in most years – occasional drying (about every 5 years) can be beneficial because it removes fish.



8. Submerged plants will be totally submerged or floating in the water column and will be planted at a density of four plants per metre squared. Emergent plants will be planted in the water column to a planting depth of 0-500mm. A planting density of 8 plants per metre squared is recommended. Marginal plants will be planted at or just above the water's edge at a maximum planting depth of 350mm. A planting density of 8 plants per metre squared with 7cm plugs is recommended. Planting should take place in mid-spring to early summer, when the water has warmed and plants have commenced growth.

Management (5yrs)

9. Areas of scrub after 2024 (after a search for herptiles) will be cut during the winter period (November to February, inclusive). Approximately 25% of all the scrub within the areas of retained habitat will be cut on a yearly, rotational basis. All cut material will be piled up as log/brush piles to a height of approximately 1m within the area of retained habitat. Areas of newly planted scrub will not be cut in the first 3 years to allow it to become established. Where plants have failed to establish they will be replaced with new stock.
10. Tall perennial weeds such as cow parsley will be strimmed in spring to a height of 150mm to allow the sown and planted ground flora species to become established. Scrub which colonises these woodland areas will also be strimmed and removed by hand in the autumn.
11. The areas of grassland within the receptor sites will be mown once a year in June/July to a sward height of approximately 150mm. All arising will be piled up in the receptor area to provide foraging habitat for GCN whilst also reducing the nutrients available to the area of grassland and thereby maintaining and encouraging a more diverse sward. A 1m strip of grassland adjacent to the wildlife pond and woodland edge along the embankment will be left uncut throughout the year to provide year round cover for GCN. Scrub which develops in this area will be removed as part of the scrub management regime. Newly sown areas of wildflower meadow planting, in particular on top of the hibernacula's will remain uncut in the first year after sowing and then will be cut to approximately 150mm in June or July in each year thereafter.
12. The wildflower grassland sown on top of the hibernacula will be subject to an annual cut as described above. During this cut the hibernacula will be checked and if there has been any loss of soil/subsidence, then this will be re-instated at an appropriate time of year and in agreement with an appointed ecologist.

Pond

13. The wildlife pond will be subject to annual monitoring during the newt breeding season to establish presence or likely absence of GCN or other amphibian species, the results of which will be sent to the LPA and NRW.
14. In Autumn aquatic vegetation will be maintained at approximately 40% cover. During the annual inspection any plant cover exceeding 40% will be removed and placed on the bank and left for 24 hours prior to disposal. This will allow any aquatic invertebrates and larval stages of amphibians to return to the pond. During the annual check leaf litter and litter/dumped rubbish will be removed. Also a visual check for the presence of any fish will be undertaken. If fish are recorded then appropriate action to remove these fish will be undertaken.
15. If during each annual check the pond appears to not be holding water or is subject to disturbance then remedial action, including re-statement of the pond and/or fencing off of the pond will be undertaken. If aquatic vegetation fails to become established then this will be replaced.

Monitoring

16. The client will appoint the ecologist to undertake monitoring of the wildlife pond created on site. Monitoring will be undertaken from spring 2022 until spring 2026. Monitoring will involve surveying the ponds using three survey methods; bottle trapping, torch survey and egg searches. Six survey visits will be undertaken on the pond to assess the population size of any GCN found in the pond. If however, no GCN have been recorded within the first four visits then the further two survey visits will be cancelled. Surveys will be undertaken from March to mid-June with at least two of the survey visits being undertaken before mid-May. Report on monitoring will be submitted to the *Wales GCN Monitoring scheme*.

Habitat Creation, Maintenance and Schedule for 5 Years

17. This table sets out the habitat creation, maintenance and monitoring regime for the 5 year period from start of construction works. After the 5 year period the management element of the below table will be undertaken in perpetuity.

18. Please note: dates are provisional on the planning consent being granted.

Table 6.1: 5 Year Habitat Creation, Maintenance and Monitoring Schedule

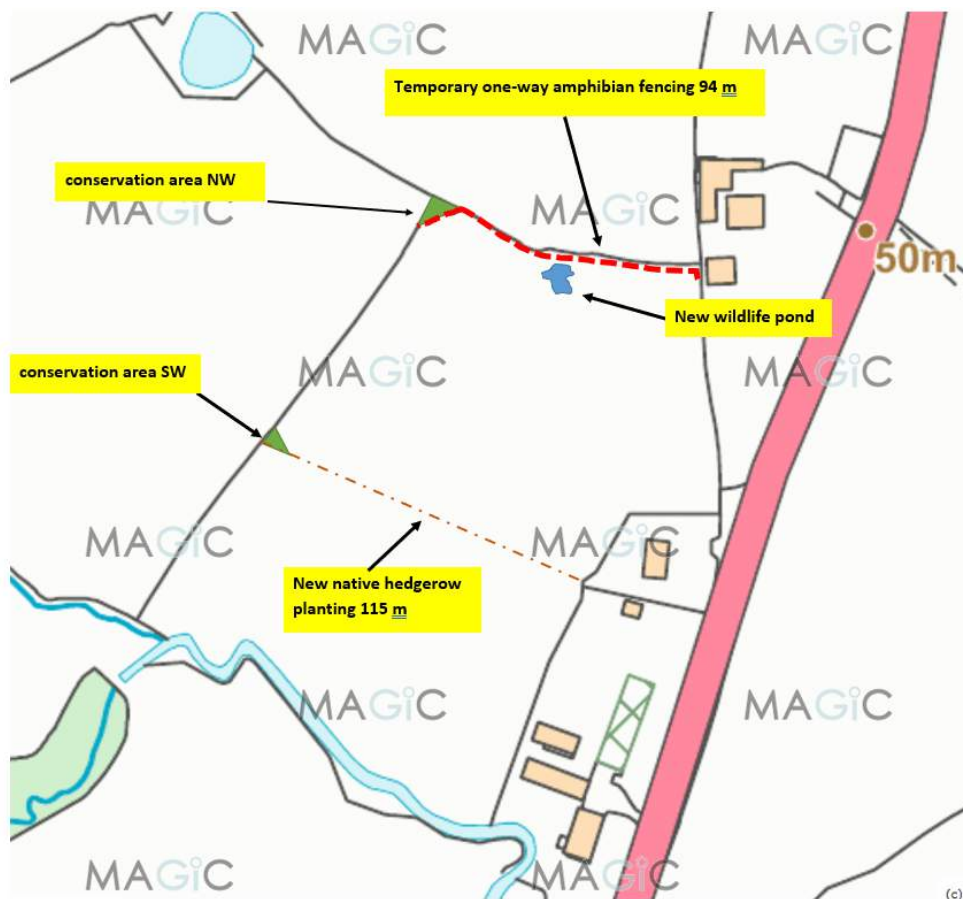
Year	Date	Timing Action
Year 1	August	- It is assumed the install of the temporary one-way fencing has been undertaken - Cut existing grassland to 150mm - Create wildlife pond - Create hibernacula(s)
	September	- Strim tall perennial weeds within grassland areas of the two receptors to 150mm - Sow and plant ground flora plants - Sow grassland wildflower seed mix
	November February	Plant scrub within retained areas of habitat.
Year 2	April	If seed sowing/planting not undertaken in Yr 1 then this work to be undertaken in Yr 2 and will include: - Strim tall perennial weeds within woodland and grassland areas to 150 mm - Sow and plant ground flora plants - Sow grassland wildflower seed mix
	April – mid June	Undertake monitoring survey of wildlife pond.
	June/July	- Cut existing grassland to 150mm - Cut any grassland sown the previous year to 150mm
	September	Check condition of pond, remove rubbish and aquatic vegetation as appropriate
	November - February	Cut to 150mm 25% of scrub within retained areas of habitat.

Year 3	April – mid June	Undertake monitoring survey of wildlife pond.
	June/July	Cut grassland areas to 150mm.
	September	Check condition of pond, remove rubbish and aquatic vegetation as appropriate
	November - February	Cut to 150mm 25% of scrub within retained areas of habitat.
Year 4	April–mid-June	Undertake monitoring survey of wildlife pond.
	June/July	Cut grassland to 150mm.
	September	Check condition of pond, remove rubbish and aquatic vegetation as appropriate
	November February	Remove 25% of scrub within retained areas of habitat.
Year 5	April–mid-June	Undertake monitoring survey of wildlife pond.
	June/July	Cut grassland areas to 150mm.
	September	Check condition of pond, remove rubbish and aquatic vegetation as appropriate
	November Feb	Cut to 150mm 25% of scrub within retained areas of habitat.

Appendix 5 - Badger Method Statement

The following sensitive working methodologies are recommended to ensure impacts upon badgers are avoided during the period of the proposed works:

- A copy of this method statement must be kept on site (we suggest having a laminated copy in the site cabin/ compound);
- An experienced Ecological Clerk of Works (ECW) shall be appointed to ensure RAM's are enforced;
- A toolbox talk on badgers and development must be given to site personnel before any works take place on site;
- Excavation work and heavy machinery should be kept well away from where it could result in damage to the sett or disturbance to any badger occupying a sett;
- All work will be undertaken during daylight hours;
- Any artificial lighting will be directed away vegetated boundaries and/ or any active setts;
- Fires and chemicals will not be used within 20m of any active sett;
- Any site compound will need to be sited at least 20m from any active sett;
- Access between setts and foraging / watering areas must be maintained or new ones provided;
- Badger paths will not be blocked at any time;
- Any trenches will be covered at the end of each working day, or include a means of escape for any animal falling in (badgers will continue to use established paths across a site even when construction work has started);
- Any temporarily exposed open pipe system will be capped in such a way as to prevent badgers gaining access, as may happen when contractors are off site;
- Temporary stock piling of spoil material will be left un-compacted and not allowed to grass over, as if grassed over and compacted, this may encourage badgers to excavate new setts and lead to costly delays – if this is not possible, an electric badger fence can be used to prevent badger access to parts of the site;
- Any dangers within the work site to badgers will be identified and reported to the appointed badger consultant/ ecologist and then measures will be undertaken to minimise any such risk;
- No dogs to be taken onto the site by any of the workforce.
- Should badger(s) be encountered during the works, all works should halt and advice from Pearce Environment will be sought.



PearceEnvironment LTD

Site: Stonebridge house
 Client: SP
 Temporary Amphibian Fencing and conservation plan
 May 2021 TEP

Temporary Amphibian Fencing (TAF) around perimeter to remain during construction
 New native species hedgerow

Plan 1 Phase 1 Habitat Plan

This plan has been prepared using the site location map provided by the client
This plan is indicative, locations of all features are approximate and not drawn to scale



Key

Application site	
Hedgerow	
Semi improved Grassland	
Fence	
Deciduous tree	

Project Land at Stone Bridge

Title
Plan 1 : Phase 1 Habitat Plan

Client SP

Drawn by TP 08/01/2021
Version 01

PearceEnvironment LTD

TARGET NOTES

- T1 – Depression in ground recommended for a new wildlife pond/scrape
- T2 – T1/T2 tree with potential bat roost features
- T3 – T4 tree with potential bat roost feature
- T4 – T10 tree with potential bat roost feature
- T5 – Habitat piles recently created for removal under ECW supervision
- T6 – Habitat piles recently created for removal under ECW supervision
- T7 – Habitat piles recently created for removal under ECW supervision
- T8 – Habitat piles recently created for removal under ECW supervision
- T9 – Badger path
- T10 – Badger path