

Habitat Suitability Index (HSI) Report

Project: Caretaker House, Hafod Road, Johnstown, Wrexham, LL14 6HF

Client: Ms Nicola Selvey

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EXECUTIVE SUMMARY

The contents of this report detail the findings of a Habitat Suitability Index (HSI) great crested newts (GCN; *Triturus cristatus*) undertaken during November 2019 at Caretaker House, Hafod Road, Johnstown, Wrexham, LL14 6HF (hereafter referred to as 'the site'). The site is centred on approximate Ordnance Survey Grid Reference (OSGR) SJ 3135 4660. The findings of this report have been used to inform a planning application for the proposed erection of a stables and manège; classed as a minor development (small scale/ localised nature).

The site, set within a rural environment, is composed of improved grassland, tall ruderal vegetation, scattered tree(s) and fencing.

The site is situated within a 'Key Ecological Corridor' associated with the Johnstown Newt Sites SAC, located ~41m east of Bonc-Yr-Hafod Country Park SSSI. A COFNOD data search returned a total of 706 records of GCN, recorded between 1992 and 2019, the vast majority of which originate from the Bonc-Yr-Hafod Country Park designation. A nationally-important assemblage of other, widespread amphibian species has also been recorded within Bonc-Yr-Hafod Country Park SSSI.

Seven (7) potential significant standing waterbodies (**WB1** – **WB7**) were identified during the desktop study, within a 250m zone of influence, most of which are situated within Bonc-Yr-Hafod Country Park. **WB6** is a known GCN breeding pond, with a medium population of GCN recorded within this pond as recently as 2019. **WB1** provides 'below average' suitability for GCN. **WB7** provides 'poor' suitability for GCN. **WB2** – **WB5** are all drains/ ditches which were found to be dry/ vegetated at the time of the survey; therefore, these are not considered suitable for supporting GCN.

The land within the development footprint is considered to have 'low' potential for GCN to be present, given the sub-optimal suitability of the habitat (short, grazed grassland pasture), absence of significant hibernation features/ refugia and high levels of disturbance. The habitat upon Bonc-Yr-Hafod Country Park which surrounds **WB6/ WB7** and intervenes these waterbodies from the site, provides significantly greater terrestrial opportunities for GCN than on the site itself. The site lies in close proximity to nationally-importation populations of GCN/ amphibians within the Johnstown Newts Sites SAC/ Bonc-Yr-Hafod Country Park SSSI. Habitats adjacent to, but outside of the development footprint (notably hedgerows), may act as dispersal corridors. It is considered that there is a 'low' risk of killing/ injuring/ disturbing GCN/ other amphibians potentially commuting across the site during the construction phase.

No direct impacts upon any conservation features upon the Johnstown Newt Sites SAC/ Bonc-Yr-Hafod Country Park SSSI are anticipated as a result of the proposals. No indirect impacts (loss of dispersal corridors/ other important off-site habitats, creation of significant dispersal barriers etc.) or collective impacts from multiple developments are anticipated as a result of the proposed development.

No further survey with regard to GCN is considered necessary provided a strict mitigation and enhancement strategy is adhered to, including adherence to Reasonable Avoidance Measures (RAM's) detailed in a method statement for GCN; a pre-commencement survey and monitoring by an Ecological Clerk of Works (ECW); sensitive groundwork timings (to be undertaken during the winter months); maintenance of short-sward grassland (sub-optimal for GCN/ amphibians) on the site; and enhancement (including improvement works to WB1 and re-instatement of hedgerows). Should this strategy be unfeasible or become impractical/ insufficient at any time during the development, alternative measures must be implemented.

All future lighting on the new development must confirm to Bat Conversation Trust (BCT) guidelines and it is recommended that biosecurity protocol is followed during the development.

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.

GREAT CRESTED NEWT LEGISLATION

- The great crested newt (GCN; *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 GCN(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.

1. INTRODUCTION

1.1 COMMISSION AND PROPOSALS

- Pearce Environment Ltd were commissioned by Ms Nicola Selvey in November 2019 to undertake a Habitat Suitability Index (HSI) at Caretaker House, Hafod Road, Johnstown, Wrexham, LL14 6HF (hereafter referred to as 'the site'). The site is centred on approximate Ordnance Survey Grid Reference (OSGR) SJ 3135 4660.
- The findings of this report have been used to inform a planning application for the proposed erection of a stable block and manège/ illuminated riding area (**Appendix 1**).

1.2 AIMS

- This report sets out the findings of a desk-based study, site-based study and Habitat Suitability Index (HSI) undertaken by Pearce Environment Ltd in November of 2019.
- The aims of this report are to:
 - i. Determine the suitability of the terrestrial habitat upon the site for GCN;
 - ii. Determine the suitability of significant standing waterbodies in close proximity with the site for GCN;
 - iii. Identify species constraints pertinent to the proposals, in accordance with statutory legislation and guidance given in given in national planning framework and local planning policy;
 - iv. Determine the need for any additional/ Phase 2 species surveys, where necessary;
 - v. Detail any mitigation and compensation schemes, Reasonable Avoidance Measures (RAM's) and/ or licensing requirements, where necessary;
 - vi. Identify opportunities for the proposed development to provide enhancements and add to the biodiversity resource within the site.

1.3 BACKGROUND

- No previous ecological reports relating to the site itself are known to the surveyor.
- A letter was issued by Natural Resources Wales (NRW) on 16/12/2019 (letter reference: CAS-105530-P5J4). Further correspondence was subsequently made with Matthew Ellis (*email & telecom.*; 07/01/2020) and Emma Broad of Wrexham County Borough Council (*email comms.*; 07/01/2020).

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, notably the sites' proximity to designations of conservation concern, potential significant bodies of standing water and known records of protected/notable species (**Table 2.1**).
- This information is used to inform and support the recommendations and conclusions set out in this report.

Table 2.1 Summary of resources used and information requested during the desk study (2019)

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

- All pertinent information obtained during the desk study is referenced within **Section 3**, **Section 4**, **Appendix 2** and **Appendix 3** of this report.

2.2 HABITAT SUITABILITY INDEX (HSI)

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.

Habitat Suitability Index (HSI)

- Those waterbodies identified within the search area not considered to be separated from the application site by major dispersal barriers were assessed for their potential to support great crested newts (GCN; *Triturus cristatus*) using the Habitat Suitability Index (HSI), developed by Oldham et al. (2000)². This assessment uses a scoring system, derived from several criteria including pond area, water quality, fish/ waterfowl presence and the value of the surrounding, terrestrial habitat. Waterbodies with high scores are considered more likely to support GCN than those with lower scores.

¹ Multi-Agency Geographic Information for the Countryside website (www.magic.gov.uk/)

² Oldham et al. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155.

- This tool has been developed to provide a quantitative measure of the suitability of a waterbody to support GCN and should not be used as a substitute for presence/absence surveys where they are required.
- HSI scores relating to the suitability of the waterbodies assessed to support GCN are described in **Table 2.2**.

Table 2.2 Pond suitability for great crested newts determined using HSI scoring system

HSI Score	Waterbody Suitability to Support GCN
<0.5	Poor suitability
0.5 – 0.59	Below average suitability
0.6 – 0.69	Average suitability
0.7 – 0.79	Good suitability
>0.8	Excellent suitability

- Appropriate biosecurity measures were taken during waterbody visits, where necessary.
- A thorough site walkover was undertaken to assess the terrestrial habitat suitability for GCN. A terrestrial hand search was carried out for GCN seeking refuge beneath any debris/ potential refugia (where appropriate).
- The survey was performed by Jonathan Molesworth BSc (Hons) Grad CIEEM, an ecologist with 4 years' experience and holder of Natural England (NE) and Natural Resources Wales (NRW) licenses for great crested newts (licence numbers: 2017-31597-CLS-CLS and 77860:OTH:SA:2017), NE licence for white-clawed crayfish (licence number: 2018-38384-CLS-CLS), a first class degree in Biology from the University of Liverpool, and membership with the Chartered Institute of Ecology and Environmental Management (CIEEM membership number: 15105). Jonathan is also a qualified tree climber, and is a member of the Shropshire Mammal Group and Shropshire Bat Group.
- The survey was undertaken during a daytime visit on 25th November 2019. This visit was carried out at a temperature of 10°C and in overcast conditions.

Other Species

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

2.3 LIMITATIONS

- December is outside of the breeding season for GCN; therefore, it was taken into consideration that GCN are most likely utilising terrestrial habitats at this time.
- All aspects of the site and immediate surrounds were fully accessible during the survey. All potential, significant standing waterbodies within 250m of the site were also fully accessible.
- 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

3.1 SITE DESCRIPTION

- The site is set within a rural environment, located approximately 2.5km south-southwest of Wrexham Town, beyond the eastern periphery of the village of Johnstown (**Figure 3.1**).

Figure 3.1 Site location (indicated), reproduced using freely-available online mapping resources (2019)



- The site is directly surrounded by pasture fields to the north and south, Bonc-Yr-Hafod Country Park SSSI to the west (on the other side of Hafod Road) and the A483 (a major road) to the east (**Figure 3.2**).
- The site itself (~0.09 hectares) comprises horse-grazed pasture. The following range of broad habitats are present on the site:
 - Improved Grassland;
 - Fencing;
 - Scattered Trees; and
 - Tall Ruderal Vegetation.
- Vehicular access into the site is currently gained via an entrance/ driveway which leads off Hafod Road and serves Caretaker House, north of the site (**Image 3.3**). A second informal entrance (field gate), which is also in current use, leads off Hafod Road further south and into the pasture field in which the site is set (**Image 3.4**).

Figure 3.2 Aerial view of the site (indicated in red) and immediate surrounds, reproduced using freely-available online mapping resources (2019)



Image 3.3 Existing vehicular access track/ driveway serving Caretaker House



Image 3.4 Second entrance to the site (field gate)



3.2 BROAD HABITATS

Improved Grassland

- The main body of the site consists of species-poor improved grassland, which is grazed by horses to a short sward height (**Image 3.5; Image 3.6**). Herbaceous species within the sward include common dandelion (*Taraxacum officinale*), common buttercup (*Ranunculus repens*), common daisy (*Bellis perennis*) and thistle (*Cirsium spp.*).

Fencing

- The majority of the site is bounded (and bisected/ compartmentalised) by timber post and wire fencing, some of which is in a poor state. Electric fencing is also present along part of the southern boundary (**Image 3.6 – Image 3.8**).

Scattered Trees

- Several scattered trees encroach the eastern (and lie near to the northern) site peripheries, with species including elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*) and sycamore (*Acer pseudoplatanus*), most of which range from young to semi-mature (**Image 3.5; Image 3.7; Image 3.8**).

Tall Ruderal Vegetation

- The majority of the site boundaries, marked by fencing, are populated with very narrow strips of tall ruderal vegetation, dominated by common nettle (*Urtica dioica*), broad-leaved dock (*Rumex obtusifolius*) and cleaver (*Gallium aparine*; **Image 3.8; Image 3.9**).

Image 3.5 A typical view of the eastern half of the site, showing improved grassland and scattered trees



Image 3.6 A typical view of the western half of the site, showing improved grassland and fencing



Image 3.7 Scattered trees at the eastern extent of the site, also showing fencing



Image 3.8 Scattered trees and tall ruderal vegetation adjacent to (but just outside) of the northern site boundary



Image 3.9 Narrow strip of tall ruderal vegetation along the southern boundary fence



3.3 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 COFNOD and freely-available online resources identified the presence of one (1) statutory designation of conservation concern within 1km of the site (**Figure 3.10; Table 3.11; Appendix 2**).

Figure 3.10 Proximity of statutory designations to the site, reproduced using freely-available online resources (2019)

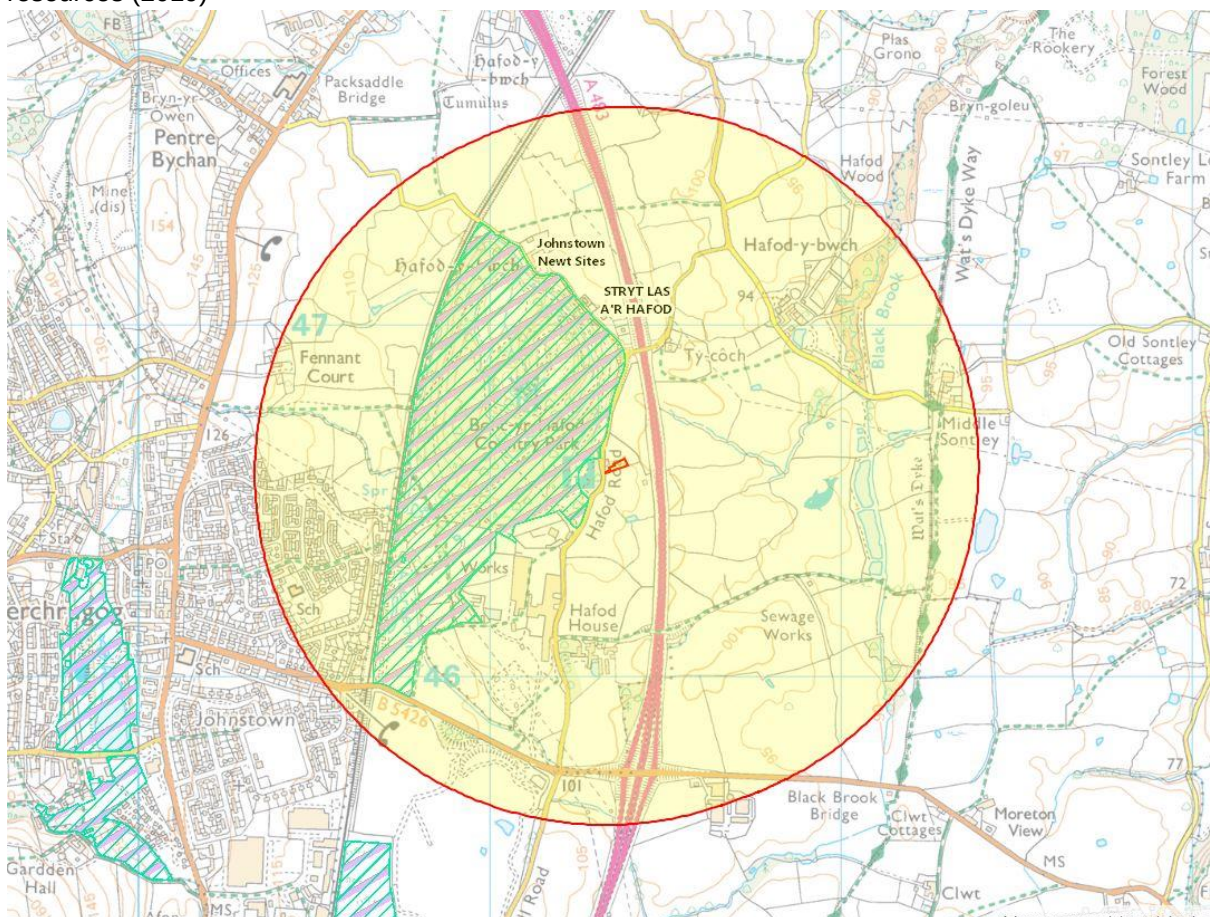


Table 3.11 Statutory Designations within 1km of the site

Site Name	Distance from site (km)	Grid Reference	Description
1376: Stryt Las A'r Hafod (SSSI)/ UK0030173: Johnstown Newt Sites (SAC)	0.04 (west)	SJ 298 459	Johnstown Newt Sites SAC is a composite site and comprises one component SSSI, Stryt Las A'r Hafod (Bonc-Yr-Hafod Country Park). This designation is located close to the village of Johnstown and is of special interest for its amphibians; particularly GCN. The population of GCN is one of the largest known in Great Britain and has been the focus of conservation management over the last few years. Breeding sites are provided by a mining subsidence pool, natural water-filled hollows, and ponds created as part of conservation management. Terrestrial habitat varies from marshy grassland, grazed farmland and swamp through to scrub and broad-leaved woodland. These terrestrial habitats form important foraging and over-wintering areas for adult and juvenile amphibians. Nationally-important populations of other widespread amphibian species are a feature of the SSSI.

- The site is located within a 'Key Ecological Corridor' associated with the Johnstown Newt Site SAC (**Figure 3.13**)³.

Non-Statutory Designations

- A COFNOD search identified the presence of three (3) non-statutory designations of biological significance within 1km of the site (**Table 3.12; Appendix 2**).

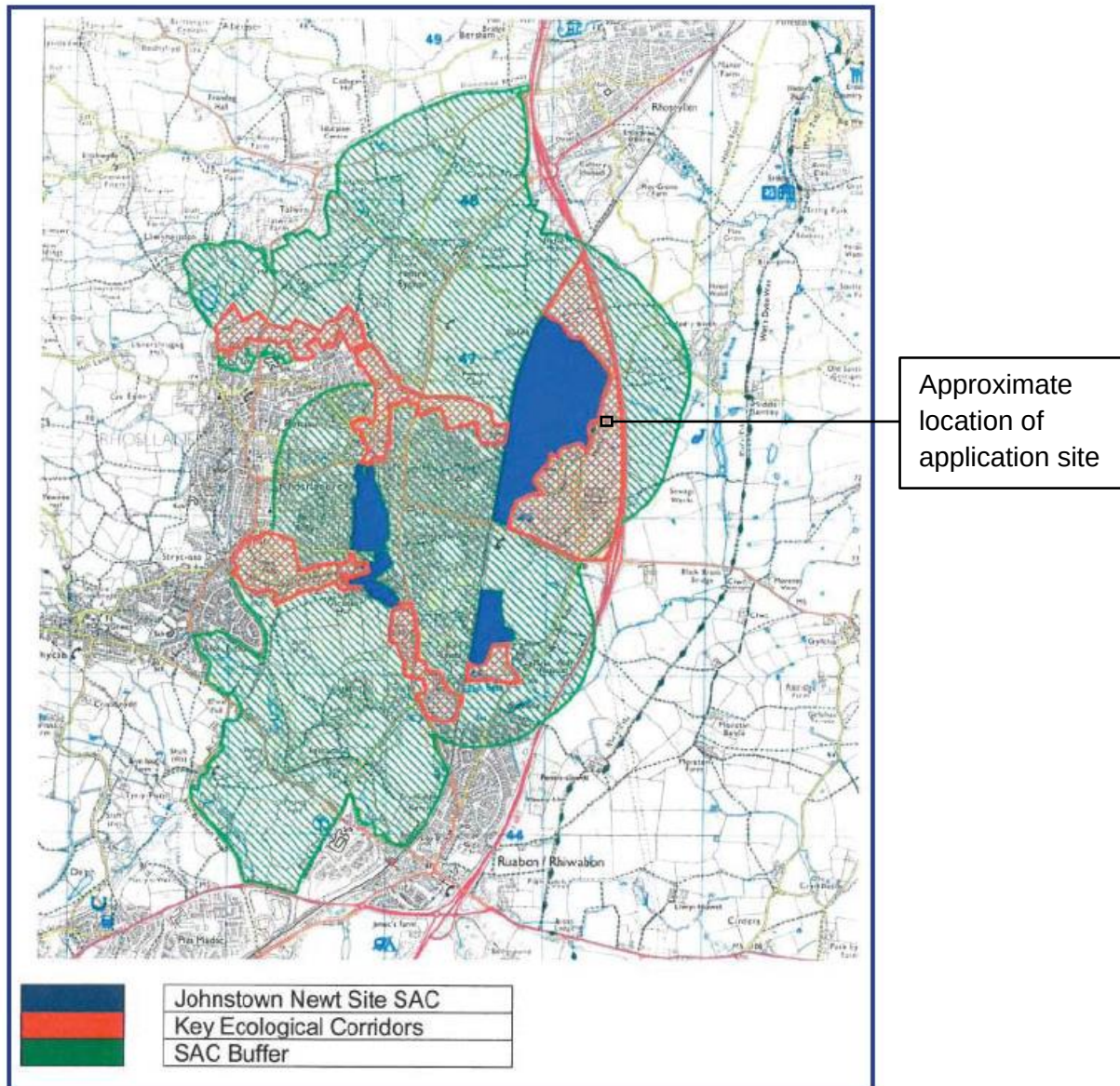
Table 3.12 Non-statutory designations within 1km of the site

Site Name	Distance from site (km)	Grid Reference	Description
W317: Erddig Estate	0.71 (northeast)	SJ 330 483	National Trust estate with woodlands, grasslands and marshes. The woodlands support a variety of ground flora and the various grassland communities are diverse. A great number of mature trees in the park have excellent insect communities including 12 notable species and 1 red data species.
30633: Restored Ancient Woodland Site	0.70 (northeast)	SJ 320 470	Restored ancient woodland site.
28947: Ancient Semi Natural Woodland	0.99 (northeast)	SJ 321 474	Ancient semi-natural woodland site.

³ Great Crested Newt Mitigation Requirements – Johnstown Newt Site SAC and the Wider Countryside (www.wrexham.gov.uk)

- The A483 (a major barrier) intervenes the site and all non-statutory designations/ woodland sites, therefore connectivity is considered to be very poor.

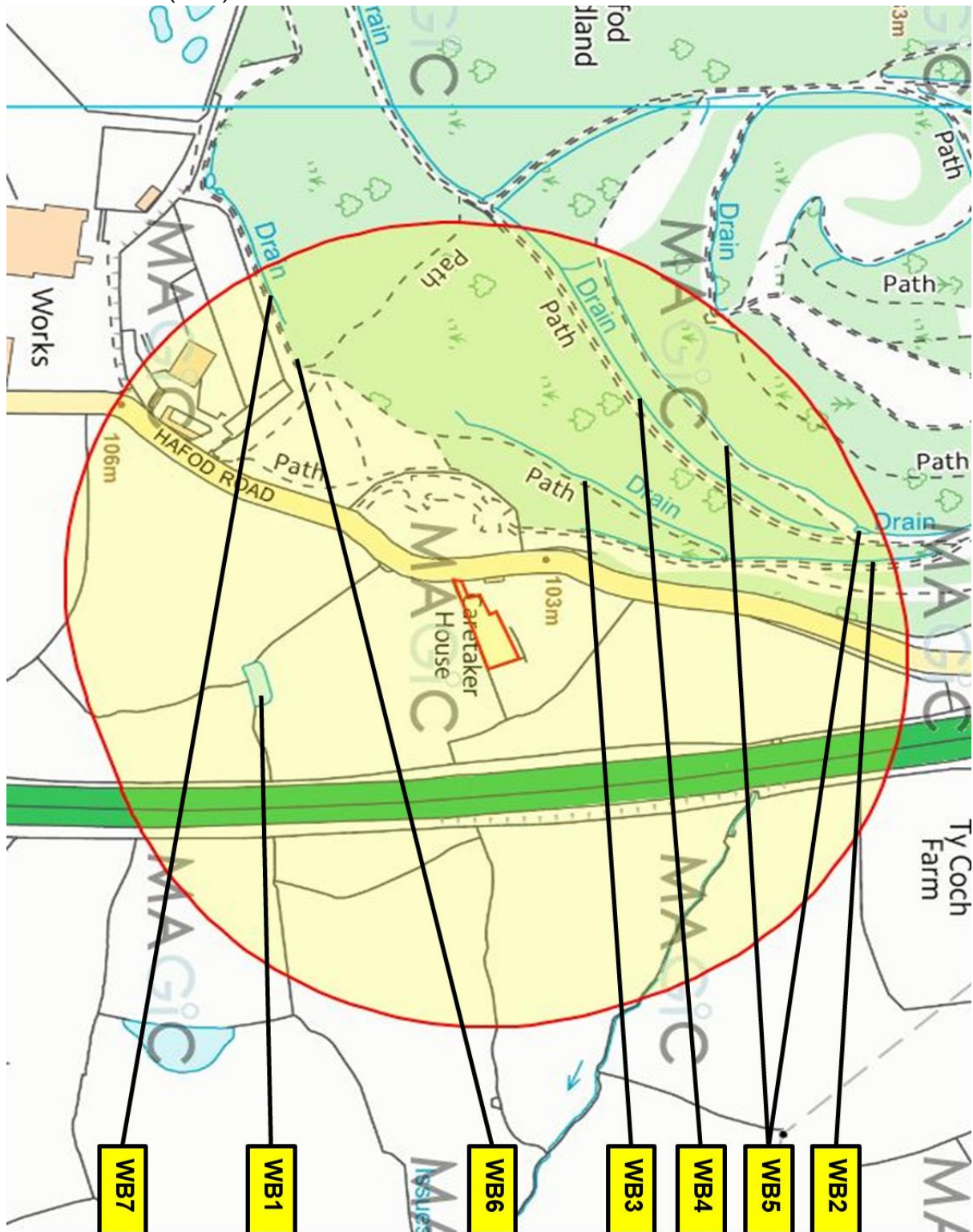
Figure 3.13 Map showing the extent of Johnstown Newt SAC and buffer



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 seven (7) potential significant bodies of standing water (**WB1 – WB7**) within a 250m zone of influence (**Figure 3.14**).
- No further habitats of importance, pertinent to the study, were identified during the desk study.

Figure 3.14 Proximity of standing waterbodies within 250m of the site, reproduced using freely-available online resources (2019)



3.4 SPECIES RECORDS

- A database search from COFNOD of a 1km radius surrounding the site during the course of the desk study returned a total of 1600 records, with 713 European Protected Species (EPS) records. Records for GCN/ common amphibian species are focussed upon for the purposes of this study.
- A total of 706 records of GCN were returned, recorded between 1992 and 2019, the vast majority of which are associated with Bonc-Yr-Hafod Country Park (**Appendix 3**).
 - The nearest GCN record(s) to the site originate ~180m southwest, recorded from **WB6** (a pond located on Bonc-Yr-Hafod Country Park which was subject to an assessment during the survey, detailed later within this report). These comprise a total of 37 records, between 06/05/2008 and 14/05/2019, and indicate the presence of a medium population of GCN within this waterbody.
 - All remaining GCN records originate beyond 250m from the site. A large proportion of these are accounted for by a metapopulation of GCN in mitigation ponds situated ~400-700m southwest of the site, in the southern portion of the Bonc-Yr-Hafod Country Park designation. Several other small and medium GCN populations have been recorded throughout the remainder of Bonc-Yr-Hafod Country Park, notably along the western periphery.
- Common frog (*Rana temporaria*), common toad (*Bufo bufo*), smooth newt (*Lissotriton vulgaris*) and palmate newt (*Lissotriton helveticus*) have all been recorded throughout Bonc-Yr-Hafod Country Park, many of which occur within GCN breeding ponds. All four (4) of these species have been recorded within **WB6**. This nationally-important population of widespread amphibian species is a feature of the Bonc-Yr-Hafod Country Park SSSI.

3.5 HABITAT SUITABILITY INDEX (HSI) SURVEY

Significant Waterbodies

- A daytime visit was undertaken on the 25th November 2019 to assess the suitability of all significant waterbodies (for which access was permitted) for GCN.

WB1

- **WB1** (SJ 31402 46453), located ~140m south of the site at its nearest point, is a medium-sized (~250m²) pond set on the boundary between horse-grazed pasture fields, alongside a defunct field boundary hedgerow (**Image 3.15**). The main body of **WB1** is highly over-shaded by trees, including willow (*Salix spp.*), silver birch (*Betula pendula*), holly (*Ilex aquifolium*) and hawthorn, with significant amounts of willow growing and fallen within the waterbody itself. Recent high rainfall has raised the water level in **WB1**, such that the eastern bank was partially flooded. No significant aquatic vegetation was noted, with marginal vegetation limited to occasional tussocks of soft rush (*Juncus effusus*) at the eastern end. The banks largely bare underneath the tree canopy, but with several stands of tall ruderal vegetation at the eastern end where over-shading is less severe. This waterbody is not currently fenced off from livestock.

WB2

- **WB2** (SJ 31311 46891 to SJ 31295 46661), located ~75m northwest of the site at its nearest point, is a drain/ ditch situated within Bonc-Yr-Hafod Country Park. **WB2** was completely dry and vegetated at the time of the survey, and appeared to have been so for some time (**Image 3.16**).

WB3

- **WB3** (SJ 31316 46755 to SJ 31213 46580), located ~105m northwest of the site at its nearest point, is a drain/ ditch situated within Bonc-Yr-Hafod Country Park which branches off **WB2**. **WB3** was completely dry and vegetated at the time of the survey, and appeared to have been so for some time (**Image 3.17**).

WB4

- **WB4** (SJ 31296 46824 to SJ 31069 46605), located ~160m northwest of the site at its nearest point, is a drain/ ditch situated within Bonc-Yr-Hafod Country Park. **WB4** was completely dry and vegetated at the time of the survey, and appeared to have been so for some time (**Image 3.18**).

WB5

- **WB5** (SJ 31107 46675 to SJ 31244 47001), located ~190m northwest of the site at its nearest point, is a drain/ ditch situated within Bonc-Yr-Hafod Country Park. **WB5** was completely dry and vegetated at the time of the survey, and appeared to have been so for some time (**Image 3.19**).

Image 3.15 A typical view of WB1



Image 3.16 WB2 – a dry and vegetated ditch



Image 3.17 WB3 – a dry ditch



Image 3.18 WB4 – a dry ditch



Image 3.19 WB5 – a dry ditch



WB6

- **WB6** (SJ 31168 46490), located ~180m southwest of the site at its nearest point, is a small (20m²) wildlife pond set just beyond the edge of broad-leaved woodland, within the Bonc-Yr-Hafod Country Park (**Image 3.20**). **WB1** is surrounded (but not over-shaded by) young self-set trees, including alder (*Alnus glutinosa*) and willow, has banks populated with common grasses and tall ruderal vegetation including willowherb (*Epilobium spp.*), common nettle and thistle, along with localised rush (*Juncus spp.*), reedmace (*Typha latifolia*) and common reed (*Phragmites australis*) in the margins. Scattered scrub, dominated by bramble (*Rubus fruticosus*), lies throughout the near surroundings. No significant aquatic vegetated is present.
- **WB6** is shown as two (2) adjacent waterbodies on aerial mapping resources; however, only one (1) waterbody was present at the time of the survey.

WB7

- **WB7** (SJ 31107 46675 to SJ 31244 47001), located ~190m northwest of the site at its nearest point, is a drain situated within woodland edge in the Bonc-Yr-Hafod Country Park (**Image 3.21**). **WB7**, which runs adjacent to a footpath, is approximately 100m in length, highly over-shaded by trees including oak (*Quercus spp.*), hazel (*Corylus avellana*), silver birch, hawthorn and alder, and contains much leaf litter. The water within **WB7** is very shallow and does not continuously fill the drain – multiple dry areas are present. No significant aquatic vegetation was noted, with occasional tussocks of rush noted in damp areas only.

Image 3.20 A typical view of WB6



Image 3.21 WB7 – the only ditch/ drain surveyed to be holding any water at the time of the survey



HSI Assessment

- A Habitat Suitability Index (HSI) for great crested newts (GCN) was run for those waterbodies which contain water (**Table 3.22**). It was determined that:
 - **WB1** provides 'below average' suitability for GCN;
 - **WB6** provides 'average' suitability for GCN;
 - **WB7** provides 'poor' suitability for GCN.

Table 3.22 HSI assessment of WB1, WB6 and WB7

Waterbody Reference	WB1	WB6	WB7
SI1 – Location	1	1	1
SI2 – Pond Area	0.5	0.1	0.1
SI3 – Permanence	0.5	0.5	0.1
SI4 – Water Quality	0.33	0.67	0.33
SI4 – Shade	0.2	1	0.1
SI6 – Fowl	1	1	1
SI7 – Fish	1	1	1
SI8 – Pond Count	1	1	1
SI9 – Terrestrial Habitat	0.67	1	0.67
SI10 – Macrophyte Cover	0.5	0.4	0.3
HSI score	0.59	0.65	0.38
Suitability	Below Average	Average	Poor

Terrestrial Habitat

- The suitability of the terrestrial habitat for GCN within the development footprint itself is considered to be sub-optimal overall, given the domination by grazed, short-sward grassland.
- There are deemed to be no significant terrestrial hibernation opportunities within the development footprint – no potential, artificial refugia (such as log/ brash/ rock piles, debris etc.) are present on the site itself. Limited refuge opportunities are restricted to tall-sward vegetation along fences, along with several trees/ tall-sward vegetation bounding the site to the east.
- The site is considered to provide limited terrestrial opportunities for feeding and/ or commuting, limited to the small strips of tall-sward vegetation.
- Levels of disturbance on the site and immediate surrounds are currently high, due to its current use for horse grazing.
- The treeline and associated tall ruderal vegetation beyond the northern site periphery are outside of the development footprint. A defunct, hawthorn-dominated hedgerow bounding the western edge of the property, abutting Hafod Road, is also outside of the development footprint. This hedgerow has a relatively sparse/ poor understorey and

so it is deemed to offer limited hibernation potential, but may provide a degree of connectivity/ a dispersal route between the site, **WB1** and Bonc-Yr-Hafod Country Park SSSI.

- The terrestrial habitat immediately surrounding **WB1** is deemed to be of significantly greater suitability for GCN than that which is present on the site itself.
- The terrestrial habitat observed throughout Bonc-Yr-Hafod Country Park SSSI, and intervening **WB6/ WB7** and the site (comprising broad-leaved woodland, scrub, tall ruderal vegetation and rank grassland; **Image 3.23**), is considered to provide significant refuge, feeding and commuting opportunities for GCN and therefore be of greater suitability for GCN than that which is present on the site itself.
- The immediate surrounds to the north, east and south of the site largely comprise pasture fields bounded by hedgerows/ trees. These hedgerows are considered likely to provide the primary dispersal corridors for GCN within this 'Key Ecological Corridor' associated with the Johnstown Newt Sites SAC.

Image 3.23 The terrestrial habitat within Bonc-Yr-Hafod Country Park (and intervening WB6/ WB7 from the site) is considered to be of significantly greater suitability for GCN than that which is found on the site itself



4. CONCLUSIONS

4.1 IMPACTS OF THE PROPOSED DEVELOPMENT

Impacts Upon GCN

- The land within the development footprint is deemed to have 'low' potential for GCN to be present, given the sub-optimal suitability of the habitat (short, grazed grassland), absence of significant hibernation features/ refugia and high levels of disturbance.
- The site is situated in close proximity to a nationally-important population of GCN within the Johnstown Newt Sites SAC, and a nationally-important assemblage of other, widespread amphibian species featured within Bonc-Yr-Hafod Country Park SSSI. There are no intervening dispersal barriers between Bonc-Yr-Hafod Country Park SSSI and the site. It is therefore considered *possible* that GCN/ other amphibian species will commute across the development footprint.
- **WB6**, located ~180m from the site upon Bonc-Yr-Hafod Country Park, is a known GCN breeding pond (and supports other important amphibian species). This is also the location of the nearest GCN record(s) to the site.
- **WB1** provides 'below average' suitability for GCN; **WB6** provides 'average' suitability for GCN; **WB7** provides 'poor' suitability for GCN; **WB2 – WB5** are dry/ vegetated and therefore not considered suitable for supporting GCN.
- The habitat upon Bonc-Yr-Hafod Country Park which surrounds **WB6/ WB7** and intervenes these waterbodies from the site, provides significantly greater terrestrial opportunities for GCN than on the site itself.
- The proposals are classed as a minor development, and are of a small scale and localised nature. The hedgerow bounding Hafod Road is understood to remain unaffected by the proposals.
- Given the above factors (and in the absence of mitigation/ compensation):
 - There are no anticipated negative impacts upon any breeding place of GCN (or to any areas within 100m of a known breeding place).
 - There are no anticipated negative impacts upon any 'core habitat' (within 50m of a breeding pond).
 - There is no anticipated temporary or permanent loss of any viable GCN/ amphibian hibernation habitat as a result of the proposals.
 - Important dispersal corridors (notably hedgerows) are anticipated to remain intact as part of the proposals.
 - Long-term fragmentation/ isolation as a result of the proposals, given their small scale/ localised nature, is not anticipated.

- The loss of potential, very low-value commuting and/ or feeding habitat (strips of tall-sward vegetation) within the development footprint itself will result from the proposals.
- It is considered that there is there is a 'low' risk of killing/ injuring/ disturbing GCN and other amphibian species potentially commuting across the site during the works phase (trapping in excavations/ disturbing underneath building materials/ debris etc.).

Impacts Upon SAC/ SSSI

- GCN are the primary designated feature of the Johnstown Newt Sites SAC, and thus the reason for selection of this designation. A nationally-important assemblage of other, widespread amphibian species is a feature of Bonc-Yr-Hafod Country Park SSSI.
- In order for GCN to remain in a favourable conservation status (FCS) as 'Feature 1' of the Johnstown Newt Sites SAC, the following two (2) conditions relating to off-site habitats were included within the Core Management Plan by the Countryside Council for Wales (CCW)⁴ and should be satisfied:

'Off-site habitats that function as stepping stone or corridors located between SAC compartments will be maintained for migration, dispersal, foraging and genetic exchange purposes'

and

'Off-site features that impact on successful dispersal, such as roadside gully-pots, will not be subject to future construction'

- To fulfil these conditions, existing dispersal corridors should be maintained and no new obstructions created. There should also be no increase (or change in position) of barriers, and no significant loss/ fragmentation of hedgerows or other potential dispersal corridors.
- The development lies within a 'Key Ecological Corridor' associated with the Johnstown Newt Sites SAC. The site does not, however, lie directly between any of the isolated compartments of the Johnstown Newt Sites SAC – it is situated between Bonc-Yr-Hafod Country Park SSSI and a major dispersal barrier (the A483).
- The land directly within the development footprint is not considered to form part of a GCN breeding/ hibernation site.
- The site lies within 'key connecting habitat' for GCN but no significant dispersal corridors are located within the development footprint itself – the nearest potential dispersal corridor (hedgerow bounding Hafod Road) is located adjacent to the site.
- Important dispersal corridors/ features located in the near surrounds to the site (notably hedgerows) are to remain intact as part of the proposals and the creation of new, significant barriers to dispersal is not anticipated.

⁴ Jones, T. (2008). Core Management Plan: Including Conservation Objectives For Johnstown Newt Sites Special Area Of Conservation (SAC). Eu Sac Code Uk0030173. Countryside Council for Wales.

- The development is not expected affect the frequency of traffic along Hafod Road, to and from the property, as it is understood that the equine activity will continue to be for the personal use of the applicant.
- The proposals are classed as a minor development, and are of a small scale and localised nature.
- Given the above factors (and in the absence of mitigation/ compensation):
 - No direct impacts upon any conservation features (terrestrial GCN/ amphibian terrestrial habitat and/ or breeding ponds) upon the SAC/ SSSI are anticipated as a result of the proposals.
 - The loss of functionality/ disruption to any potential GCN/ amphibian dispersal corridors/ features is not anticipated. Further indirect impacts (increased recreation pressure, footfall etc.) are not expected, given the nature of the proposals.
 - Collective impacts from multiple, small developments are not anticipated, owing to the nature of the proposals (a one-off development of stables/ manège, rather than housing), and given that previous planning history of the surrounding area does not indicate other small developments.

4.2 RECOMMENDATIONS

- No further survey(s) with regard to GCN is considered necessary, provided a strict mitigation and enhancement strategy is adhered to (it is considered that further surveys upon **WB6** are not required, given that the results of such surveys would be immaterial and not impact the recommendations made within this report).
- The recommendations detailed below will simultaneously mitigate (and enhance habitat) for both GCN and other, widespread amphibian species.

Mitigation/ Avoidance

- The grazed, improved grassland predominating the site is to be retained at a short-sward height before and during the proposed works, as is its current management, to ensure this habitat remains unfavourable for GCN/ amphibians throughout the works period.
- A pre-commencement walkover of the site will be undertaken by an Ecological Clerk of Works (ECW) immediately prior to the initiation of works, to ensure there have been no significant changes in the habitats/ conditions within the development footprint.
- Reasonable Avoidance Measures (RAM's) detailed in a method statement for GCN in **Section 4** of this report are to be followed during all development activities (including de-vegetation), to mitigate against the risk of killing, injuring or disturbing GCN/ amphibians potentially commuting across the site.
- All groundworks must occur during the winter months (mid-October to mid-March), when newts are inactive and are most likely to be hibernating within terrestrial habitat

features away from the site – should groundworks be required outside of this timeframe, ECW supervision is necessary.

- The hedgerow bounding Hafod Road (outside of the development footprint) is to be retained (it has been suggested by the client that existing access serving Caretaker House will be utilised during construction). Any section(s) of hedgerow(s) which require removal must be initially cut to ground level (outside of the bird nesting season or following a check for nests), after which all roots are to be grubbed out only during August/ September, when temperatures are above 5°C (when newts are least likely to be hibernating in these features).
- The duration of works (particularly groundworks) is to be kept as short as is reasonably possible.
- No standing water is to be allowed to persist on the site.
- Regular (we recommend monthly) monitoring visits by an ECW are required to ensure all RAM's are being adhered to. A compliance report should be submitted to the Local Planning Authority (LPA) once works are complete in order to demonstrate this.
- In the event GCN are discovered at any time during the development, works will immediately halt and Pearce Environment Ltd will be contacted for advice. The development may need to be suspended until the relevant licence from NRW is obtained.

Enhancement

- The provision of enhancements to **WB1** and the near surrounds is recommended.
- Following consultation with the LPA, it has been suggested that reducing the amount of heavily horse-grazed pasture and planting/ reinstating some significant hedgerows across the site would be the most meaningful enhancement for GCN/ amphibians in this instance.
- The following enhancement measures are suggested:
 - Improvement of **WB1** by way of tree thinning/ removal to reduce over-shading and promote the natural regeneration of marginal/ aquatic plants;
 - Creation of terrestrial hibernation/ shelter opportunities near **WB1** by way of hibernacula/ habitat piles, constructed using the arisings of tree thinning works;
 - Creation of terrestrial feeding opportunities by managing the grassland surrounding **WB1** appropriately (annual cut);
 - Enhancement of the surrounding land as a dispersal corridor by way of new, native hedgerow planting; by 'gapping up' the hedgerows bounding the horse pasture field to the west (bounding Hafod Road) and south; and planting of new hedgerows, as appropriate.

- The prescribed mitigation and enhancement strategy is deemed sufficient to ensure the favourable long-term conservation status of GCN and other, widespread amphibian populations which form features of the Johnstown Newt Sites SAC/ Bonc-Yr-Hafod Country Park SSSI, and mitigate against adverse impacts upon individual GCN/ amphibians.
- Should any part(s) of this strategy become unworkable, impractical or insufficient (in the opinion of the appointed ecologist) at any point during the development, an alternative must be designed and implemented following discussing with the appointed ecologist, the LPA and/ or NRW.

4.3 OTHER SPECIES

- It is considered that all species of amphibian recorded within the Johnstown Newt Sites SAC/ Bonc-Yr-Hafod Country Park SSSI will be protected and will benefit from the prescribed mitigation and enhancement strategy.
- Any artificial lighting during and post-development is to be directed away from any vegetated site boundaries/ trees and all future external lighting will be of the Passive Infra-Red type, set on a short timer and orientated towards the ground. This is based on guidance from the Bat Conservation Trust (BCT)⁵.
- No further species pertinent to this study were found and no field signs of other protected or notable species were observed during the PEA.

4.4 BIOSECURITY

- Harmful pathogens, such as bacteria, viruses and fungal spores, can cause huge damage to wildlife, crops and trees if introduced into a new area.
- Chytridiomycosis is an infectious disease caused by two (2) species of chytrid fungus, which is fatal to most amphibians, including GCN. Transmission typically requires damp/ wet equipment or animal-to-animal contact. 'Chytrid' is known to have occurred previously at the Johnstown Newt Sites SAC.
- No Invasive Non-Native Species (INNS) were identified on (or adjacent to) the site during the site visit.

Biosecurity Protocol

- Biosecurity protocol must be followed throughout the entirety of the construction, operational and enhancement phases of the project, in order to minimise the risk of contamination and/ or the spread of INNS/ diseases/ Chytrid. We recommend that methodology/ protocol detailed in 'Advice Note 4: Amphibian Disease Precautions: A Guide for UK Fieldworkers by ARG UK' and Non-Native Species Secretariat (NNSS) is followed ^{6 7}.

⁵ Bat Conservation Trust (2009). Bats and Lighting in the UK.

⁶ NNSS – GB Non-Native Species Secretariat (2019) <http://www.nonnativespecies.org/checkcleandry>

⁷ ARG UK (2017). ARG UK Advice Note 4: Amphibian Disease Precautions: A Guide for UK Fieldworkers. Amphibian and Reptile Groups of the United Kingdom.

5. METHOD STATEMENT (GCN)

5.1 IMPACT OF THE WORKS

- 'Low' risk of killing/ injuring/ disturbing GCN and/ or amphibians commuting across the site during groundworks/ de-vegetation.

5.2 REASONABLE AVOIDANCE MEASURES (RAM's)

- The following sensitive working methodologies are recommended to ensure impacts upon GCN (and other species of amphibian), are avoided during the period of the proposed works:
 - An experienced Ecological Clerk of Works (ECW) shall be appointed to ensure RAM's are enforced;
 - A copy of this report/ method statement must be kept on site at all times (we suggest keeping a laminated copy in the site office/ cabin);
 - A toolbox talk/ induction will be given to site staff by the ECW which will cover the legal status of GCN/ amphibians and their local status, the method of working, and action to be taken if protected species are encountered during construction;
 - Removal of any tall-sward vegetation (if required) is to be undertaken between March and October inclusive, and during temperatures exceeding 5°C (when amphibians are active and can disperse naturally) – de-vegetation must be carried out in a phased fashion, using hand tools and with clearance undertaken from a central point outwards – vegetation will be subject to an initial cut to ~200mm ('boot height'), then remaining vegetation can then be removed below 100mm thereafter;
 - 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;
 - The holes resulting from the removal of fence posts must be filled in immediately;
 - No piles of loose construction materials are to be created during works – all material will be kept on hardstanding, stored on pallets, removed immediately from the site or checked by an ECW prior to being removed;
 - Any site compound must be sited upon hardstanding;
 - In the event GCN are discovered at any time during the development, works will immediately halt and Pearce Environment Ltd will be contacted for advice – contractors are not to handle GCN unless informed to do so by the ECW.

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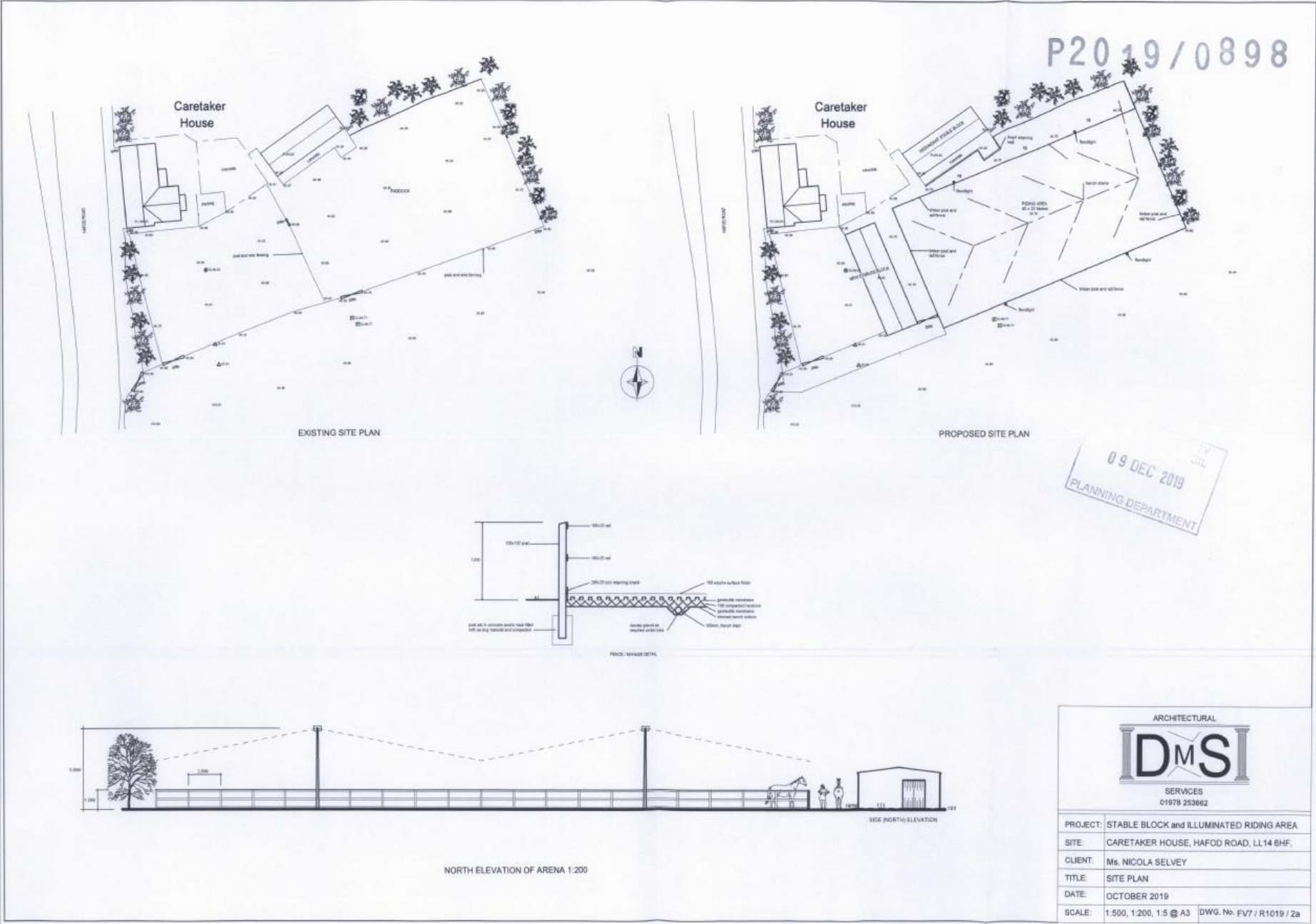
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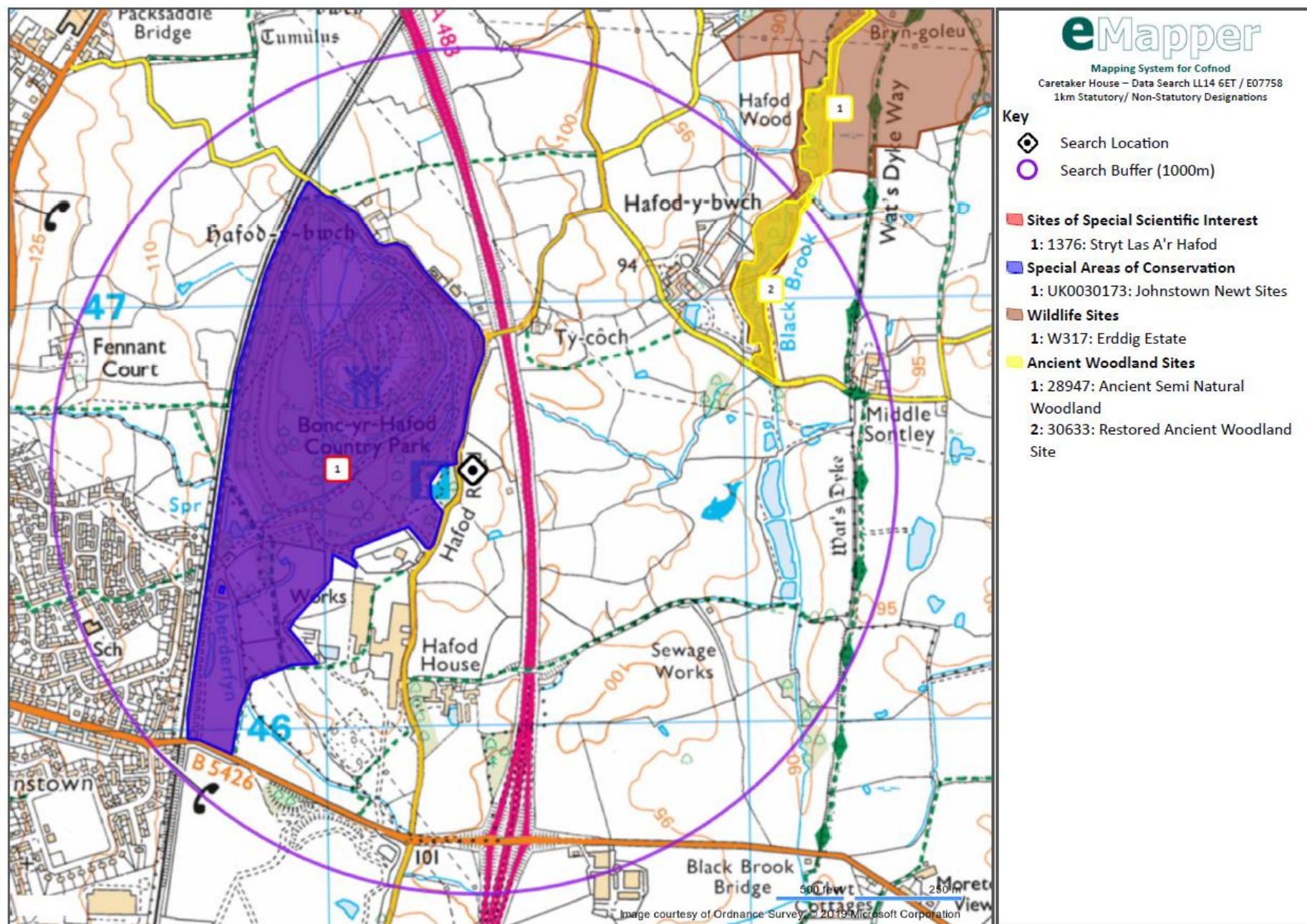
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Appendix 1 Existing & Proposed Site Plans



Appendix 2 COFDOD 1km Statutory & Non-Statutory Designated Sites Map



Appendix 3 COFDOD 1km Great Crested Newt Records Map

