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| <b>Report Title</b>   | <b>Proposed Residential Development at Former Legacy Scrap Yard, Esclusham Mill, Llwyneinion, Wrexham, LL14 4ET – Great Crested Newt Mitigation Strategy</b> |
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**Quality Assurance**

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| <b>Consultation with Emma Broad<br/>(Wrexham County Borough Council,<br/>Ecology and Biodiversity Officer)</b> | <b>Max Ellson</b>        | <b>various</b>                      |
| <b>Great Crested Newt Mitigation<br/>Strategy</b>                                                              | <b>Max Ellson</b>        | <b>October 2019</b>                 |

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*Figure 1 – Site Location*

*Figure 2 – Photograph Locations*

*Figure 3 – Indicative Amphibian Exclusion Fencing*

*Appendix 1 – Copy of Blueprint Architectural Services plan, drawing no. P1\_15/003\_RevH*

*Appendix 2 – Copy of Tyrer Ecological Consultants (2019) 'Phase 1 Habitat Map'*

*Appendix 3 – Photographs to Show Habitats on/ adjacent to the Application Site*

*Appendix 4 – Copy of emails to/ from Holding Habitats*

## 1 INTRODUCTION

### 1.1 Project Background

- 1.1.1 Marches Ecology was commissioned by Tyrer Ecological Consultants to prepare a Great Crested Newt (*Triturus cristatus*) Mitigation Strategy to support an outline planning application to Wrexham County Borough Council (WCBC) for a proposed residential development at Former Legacy Scrap Yard, Esclusham Mill, Llwyneinion, Wrexham, LL14 4ET (NGR: 328932 347609). The location of the site is shown in *Figure 1*. A waterbody (known as the 'acid tar lagoon'), which supports a large breeding population of Great Crested Newts, is located approximately 80 m to the south(west).
- 1.1.2 This document has been informed by review of a previous planning application/ previous ecological submissions relevant to the site (*Section 1.2*), a walkover survey completed in March 2019, a Preliminary Ecological Appraisal (PEA) (Tyrer Ecological Consultants 2019), and consultation with both WCBC and Natural Resources Wales (NRW) (*Section 1.3*). It has been concluded that an NRW Great Crested Newt 'development' licence will be required for the proposed development to lawfully proceed, and as such the structure of this document broadly follows that of the licence application Method Statement<sup>1</sup> (where deemed applicable). It considers pre-existing information on Great Crested Newts at the survey site, outlines the results of the walkover survey/ PEA (where relevant), provides an impact assessment, and subsequently provides a strategy for mitigation/ compensation/ enhancement measures. Further detail as required will be provided at the licence application stage.
- 1.1.3 This document was prepared by Max Ellson of Marches Ecology. Max Ellson is an ecologist with over nineteen years of consultancy experience. He holds an NRW Great Crested Newt 'survey and disturbance' licence (Ref: S085131-1), and has held several Great Crested Newt 'development' licences in both Wales (most recent: GCN2023WAGIND and GCN1990WAGIND) and England (most recent: 2017-30434-EPS-MIT-1). His relevant academic qualifications and professional memberships are as follows:
- Chartered Environmentalist (Society for the Environment).
  - Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).
  - MSc Vegetation Survey and Assessment.
  - BSc (Hons) Environmental Biology.

### 1.2 Brief Site/ Planning History

- 1.2.1 A planning application (P/2016/0611) was submitted to WCBC in 2016 for a smaller residential development at the site; this was subsequently withdrawn. Two ecological reports were submitted in support of this application as follows:

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<sup>1</sup> 'Template Method Statement to be used within a Great Crested Newt Development Licence Application', available at: <https://naturalresources.wales/permits-and-permissions/protected-species-licensing/european-protected-species-licensing/great-crested-newt-licensing/?lang=en>

- Pearce Environment (2016). *Ecological Appraisal – Land at Scrap Yard, Esclusham Mill, Llwyneinion, Rhosllanerchrugog, Wrexham, LL14 4ET*. Report prepared on behalf of Mr G Paletta.
- Pearce Environment Ltd (2017). *Ecological Management Plan – Former Scrap Yard, Esclusham Mill, Llwyneinion, Rhosllanerchrugog, Wrexham, LL14 4ET*. Report prepared on behalf of Mr G Paletta.

1.2.2 NRW consultation response letters (ref: CAS-20781-R8F9, dated 26<sup>th</sup> July 2016, and ref: CAS-56392-H7Q3, dated 06<sup>th</sup> March 2018) are available on the WCBC planning portal. These have been reviewed in the context of preparing this Mitigation Strategy and consulting with NRW.

### 1.3 Summary of Consultation

1.3.1 Consultation was initially sought with WCBC (Emma Broad, Ecology and Biodiversity Officer) by Tyrer Ecological Consultants in February 2019; it is understood that this was largely limited to determining if any Great Crested Newt survey (and if so what level of) would be needed to support the planning application.

1.3.2 Marches Ecology was advised that Emma considered it '*sensible....to accept a high [sic.] population and mitigate for that*'. Subsequently Marches Ecology consulted with Emma by phone on 16<sup>th</sup> April 2019; this focused on discussing the parameters/ scope of the Mitigation Strategy, including the size and location of the proposed compensation area. It is also understood that Dafydd Edwards (Blueprint Architectural Services) spoke to Emma in July 2019 regarding the proposed compensation area.

1.3.3 Further consultation with Emma was not achieved, and as such the final indicative details of the proposed compensation area, along with a small number of other issues, were discussed and agreed with NRW (Matthew Ellis, Senior Species Officer) by 'phone on 02<sup>nd</sup> October 2019.

### 1.4 Proposed Development

1.4.1 The proposed development is illustrated on a Blueprint Architectural Services plan entitled '*Proposed residential development at Former Legacy Scrap Yard, Esclusham Mill, Llwyneinion, Wrexham, LL14 4ET – Planning: Site Plan*', drawing no. P1\_15/003\_RevH, dated 09/19 – this is appended to this report as *Appendix 1*. This provides the red-line planning boundary (henceforth referred to as the 'application site'): it extends to approximately 2.64 hectares (ha) in size. It is currently dominated by open land previously occupied by a scrap yard facility, with peripheral areas of woodland/ scrub and tall-herbs.

1.4.2 Drawing no. P1\_15/003\_RevH indicates that the proposal includes for a development site extending to approximately 10667 m<sup>2</sup>. This includes for 15 No. residential properties, with associated garages, parking, gardens/ 'amenity areas'/ soft-landscaping and tree planting. The scheme also includes for an access road ('Adoptable Highway') and private driveways. Access will utilise an existing link to/ from Llwyneinion Road.

1.4.3 The proposal as shown on drawing no. P1\_15/003\_RevH also includes for the following:

- an area of Public Open Space (POS) (equating to approximately 10249 m<sup>2</sup>, including an area to be used as a drainage field as part of a SUDs (sustainable drainage system) scheme<sup>2</sup>); and
- a 'GCN Mitigation Area' (henceforth referred to as the 'compensation area') which extends to approximately 5489 m<sup>2</sup> in size. This will be fenced off from public access.

1.4.4 An existing public footpath is to be diverted outside of the compensation area with several new/ informal 'woodland walk footpaths' to be created in the POS; it is understood that these paths will not require any construction works. The approximate boundaries of the proposed development site, POS and compensation area are also indicated on *Figure 2*.

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<sup>2</sup> It is understood (Dafydd Edwards *pers. comm.*) that the drainage field as indicated on drawing no. P1\_15/003\_RevH is broadly indicative only. It will comprise of a series of buried perforated pipes and will be subject to full consideration at the detailed design stage. As the site/ extent of this feature is currently unknown it will not be dealt with further within this Mitigation Strategy. It is however recognised that any impacts associated with this feature will need to be fully assessed at the licence application stage, and appropriate mitigation measures designed (including e.g. incorporating this area into the translocation programme as detailed in *Section 4.2* as deemed necessary).

## 1.5 Legislation and Policy

### Introduction

- 1.5.1 This sub-section provides a brief summary of key relevant legislation. It should not be considered a comprehensive review and is not meant to be so. It is provided here for information only and is not intended to replace specialised legal advice. It does not replace the text of the legislation, but summarises the salient points.

### Great Crested Newt

- 1.5.2 Great Crested Newts are listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receive full protection under *Section 9*. The 1981 Act was amended by the *Countryside and Rights of Way Act 2000* (the CROW Act) which further extends the protection. It is also listed on *Annexes II and IV* of the European Union Directive on Natural Habitats and Wild Fauna and Flora (*Council Directive 92/43/EEC*), which is implemented in the UK by the *The Conservation of Habitats and Species Regulations 2017*. It is included on *Schedule 2* of the Habitats Regulations which gives it full protection under *Regulation 42(1)*. The Great Crested Newt is therefore a so-called European Protected Species. The legislation applies to all life stages of the Great Crested Newt, including eggs, larvae, juveniles and adults.
- 1.5.3 Under the above legislation it is an offence to intentionally or recklessly:
- kill, injure or take an individual of such a species;
  - possess any part of such species either alive or dead;
  - damage, destroy or obstruct access to any place or structure used by such species for shelter, rest, protection or breeding;
  - disturb such a species whilst using any place of shelter or protection; or
  - sell or attempt to sell any such species.
- 1.5.4 The Great Crested Newt is included on *Section 7* of the *Environment Act 2016*. There is also a Local Planning Guidance (LPG)<sup>3</sup> document in Wrexham (WCBC 2018) entitled '*Great Crested Newt Mitigation Requirements – Johnstown Newt Site SAC and the wider Countryside*' (adopted summer 2018).

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<sup>3</sup> Relevant LPG documents are treated as a material consideration in the determination of planning applications for development within Wrexham County Borough.

## 2 SURVEY AND SITE ASSESSMENT

### 2.1 Existing information on Great Crested Newts

- 2.1.1 The application site is located approximately 1.3 km from the Stryt Las A'r Hafod Site of Special Scientific Interest (SSSI)/ Johnstown Newt Sites Special Area of Conservation (SAC). The SSSI/ SAC comprises three separate sub-sites. The SAC citation<sup>4</sup> outlines that Great Crested Newt is an '*Annex II species that [is] a primary reason for selection of this site*'<sup>5</sup>. It further notes the following:

*'This site lies near to Wrexham in north-east Wales and is composed of two post-industrial sites where coal and clay have been extracted. The population of great crested newts...is one of the largest known in Great Britain and has been the focus of much conservation management over the last few years. Breeding sites are provided in part by a mining subsidence pool, and natural water-filled hollows on clay, whilst other ponds have been created as part of nature conservation management. Terrestrial habitat varies from marshy grassland, grazed farmland and swamp through to scrub and broad-leaved woodland. Good populations of the widespread amphibian species are also present.'*

- 2.1.2 WCBC (2018) provides a plan (in Appendix 2 of that document) showing the extent of the Johnstown Newt SAC '*and buffer*'. This plan indicates that the application site is included with the '*SAC buffer*' but not within a '*Key Ecological Corridor*'.
- 2.1.3 The SSSI citation<sup>6</sup> states that '*The water bodies at Stryt Las and Hafod support one of the largest known breeding populations of the great crested newt in Great Britain. Torch night counts undertaken during the spring have revealed over 250 adult and sub-adult animals on several occasions. They also support significant populations of the commoner amphibian species notably smooth newt Triturus vulgaris, palmate newt T. helveticus, common frog Rana temporaria, and common toad Bufo*'.
- 2.1.4 There are no waterbodies suitable for breeding Great Crested Newts within the application site. Although Tyrer Ecological Consultants (2019) refers to '*Two shallow ephemeral pools located centrally (Target Note 3)*' these are not deemed to be of sufficient depth or permanence to provide breeding habitat.

<sup>4</sup> Available at: <https://sac.jncc.gov.uk/site/UK0030173>

<sup>5</sup> There are no '*Annex I habitats that are a primary reason for selection of the site*', '*Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site*' or '*Annex II species present as a qualifying feature, but not a primary reason for site selection*'.

<sup>6</sup> Available at: <https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/find-protected-areas-of-land-and-seas/designated-sites/?lang=en>

- 2.1.5 A single waterbody is known from within approximately 250 m of the application site (although a detailed pond scoping exercise has not been undertaken to inform this Mitigation Strategy): this being a large waterbody (known as the 'acid tar lagoon') located within woodland to the (south)west. It is situated approximately 80 m from the application site boundary at its closest point. From two torch surveys undertaken by Marches Ecology in 2010 (on behalf of WCBC, not formerly reported) it has been concluded likely<sup>7</sup> to support a large<sup>8</sup> breeding population of Great Crested Newts, potentially comprising between 280 and 4200 individuals. It also supports a large population of Palmate Newts (*Lissotriton helveticus*), as well as small numbers of both Common Frog (*Rana temporaria*) and Common Toad (*Bufo bufo*). No recent (e.g. population estimate) surveys have been undertaken at this waterbody, nor are they deemed warranted to support this Mitigation Strategy. As detailed in *Section 1.3* above, Emma Broad (WCBC) has considered it '*sensible....to accept a high [sic.] population and mitigate for that*', and NRW have also concurred that further survey is not required to support this Mitigation Strategy or any subsequent licence application.
- 2.1.6 Pearce Environment Ltd (2017) records that two male Great Crested Newts '*were found under a plywood board located amongst ruderal vegetation in the northern portion of the site*' during a site visit.
- 2.1.7 Great Crested Newts are widespread in ponds in Wrexham and neighbouring counties of Flintshire and Cheshire.

## 2.2 Statutory Sites within 10 km

- 2.2.1 Refer to *Section 2.1*. No other statutory sites for Great Crested Newts are located within 10 km of the application site.

## 2.3 Objectives of the survey

- 2.3.1 The walkover survey was completed by Max Ellson of Marches Ecology on 21<sup>st</sup> March 2019. The weather was largely clear and dry. It did not comprise an Extended Phase 1 Habitat Survey/ detailed ecological survey but rather focused on reviewing the results/ habitat descriptions provided in Pearce Environment (2016 & 2017) and updating as deemed necessary. The walkover survey focused on a Great Crested habitat assessment only, and aimed to assess the habitats within and adjacent to the application site for their suitability for Great Crested Newts.
- 2.3.2 Tyrer Ecological Consultants completed an Extended Phase 1 Habitat Survey on the same day as the walkover survey (reported in Tyrer Ecological Consultants 2019); the target notes and 'Phase 1 Habitat Map' (Appendix IV) included in this report have also subsequently been utilised to aid the reporting of the walkover survey.

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<sup>7</sup> Although a peak count of 84 was recorded (equating to a medium population (10-100 individuals) as defined by English Nature (2001)), it was deemed '*arguable that due to ... limited access [for the torch survey due to dense scrub and steep banks] the results could be quite justifiably extrapolated to indicate that a large population is present*'.

<sup>8</sup> Peak count of over 100 individuals, as defined by English Nature (2001).

## 2.4 Scaled plan/ map of the survey area

- 2.4.1 Refer to *Figure 1 – Site Location*, *Figure 2 – Photograph Locations*, and *Appendix 2 – Copy of Tyrer Ecological Consultants ‘Phase 1 Habitat Map’*.

## 2.5 Site/ habitat description

- 2.5.1 The locations of Target Note numbers are indicated on the map provided in *Appendix 2*; separate descriptions are not provided in addition to the text below. Photographs are provided in *Appendix 3*, with locations indicated on *Figure 2*.
- 2.5.2 The application site is dominated by open land previously occupied by a scrap yard facility, with peripheral areas of woodland/ scrub and tall-herbs. The area previously occupied by the scrap yard appears to have been cleared in the past and supports ephemeral vegetation (Photographs 1 and 2). This resource is indicated by *Target Note 4* in Tyrer Ecological Consultants (2019)/ *Appendix 2*. It comprises a mixture of grasses, forbs and bryophytes with frequent bare areas. The vegetation is frequently sparse, short and grazed by Rabbits. Intermixed within this vegetation however are bulkier plants such as *Holcus lanatus* (Yorkshire-fog), *Deschampsia cespitosa* (Tufted Hair-grass), *Rumex obtusifolius* (Broad-leaved Dock), *Urtica dioica* (Common Nettle), *Hypericum perforatum* (Perforate St. John's-wort), *Chamerion angustifolium* (Rosebay Willowherb), *Artemisia vulgaris* (Mugwort), *Cirsium* spp. (Thistle species) and *Juncus inflexus* (Hard-rush). A photo included in Pearce Environment Ltd (2017) taken in July, indicates that the vegetation, whilst being taller due to summer growth, is nonetheless relatively sparse.
- 2.5.3 The mixed substrate comprises made ground; it is unknown for example if there are any subterranean features (such as buried brick rubble). Potential surface features (such as brick/ concrete, wood/ timber and plywood sheets) are however occasionally present. Occasional large debris piles (e.g. Photographs 4 and 5) are present on the peripheries of the ephemeral vegetation, for example at *Target Note 2* in Tyrer Ecological Consultants (2019)/ *Appendix 2*; these features variously comprise brash (including large tree roots), soil, brick, concrete and other rubble, and are occasionally partially vegetated with tall-herbs.
- 2.5.4 The boundaries of this area/ the application site (e.g. Photograph 7) are largely undefined, with occasionally lines of trees (particularly on the eastern boundary where this comprises a narrow stretch of woodland located on a steep boundary bank), small pockets of (mature) scrub, and tall-herbs being present, as indicated on the plan provided in *Appendix 2*. There is also an existing small building adjacent to Llwyneinion Road, and a central hard-standing track.
- 2.5.5 A series of undulating man-made bunds (to approximately 3-4 m high) (Photograph 3) are located to the south of the open land described above (indicated by the tall-herb vegetation near *Target Note 3* in Tyrer Ecological Consultants (2019)/ *Appendix 2*). It is unclear if these bunds simply comprise of, for example, clay scraped off nearby areas, or whether this is mixed with rubble/ tree roots etc. This feature is dominated by tall-herb vegetation (for example Rosebay Willowherb and *Cirsium arvense* (Creeping Thistle)) with grasses and bryophytes providing ground cover, and occasional small stands of low-growing *Rubus*

*fruticosus* agg. (Bramble) scrub. Young shrubs of, for example, *Salix* sp. (Willow), *Sambucus nigra* (Elder), *Prunus spinosa* (Blackthorn), and *Alnus glutinosa* (Alder) are scattered across this area. Locally this vegetation can be described as dense. This is backed to the south/ east by a line of shipping containers, occasionally fringed by semi-mature shrubs.

- 2.5.6 A mosaic of semi-natural broad-leaved woodland, mature scrub(woodland), tall-herbs and bare ground (with occasional sparse ephemeral vegetation, e.g. Photographs 6, 12 and 13) characterises the remainder of the application site. In the vicinity of *Target Note 5* (in Tyrer Ecological Consultants (2019)/ *Appendix 2*) a mixture of mature/ scrub(woodland) and broad-leaved woodland (e.g. Photographs 8 and 9) extends south and east of the shipping containers as previously described. This resource largely comprises mature Willow with locally frequent mature *Fraxinus excelsior* (Ash) and occasional *Betula* sp. (Birch) and with *Crataegus monogyna* (Hawthorn) in the shrub-layer. The ground layer supports various tall-herbs (in particular Common Nettle) and ferns, low-growing Bramble and frequent dense leaf-litter/ brash piles, fallen timber and exposed brick rubble. Several trackways to approximately 3 m wide appear to have been created in the recent past. Locally, in particular to the immediate east of the shipping containers, dense young Birch scrub predominates.
- 2.5.7 On the eastern side of the application site the woodland (Photograph 10) comprises a narrow band of mature trees on a steep bank to the site boundary. This resource appears to be largely undisturbed and supports a typical rich woodland ground layer. This grades into an area of previously disturbed vegetation (comprising a complex mosaic of Common Nettle dominated tall-herb vegetation with *Pteridium aquilinum* (Bracken) and low-growing Bramble) (Photograph 11) with pockets of mature scrub-woodland as previously described.
- 2.5.8 The application site is surrounded by woodland to the west and south: to the west the boundary comprises a dismantled railway (Photograph 15), with associated broadleaved woodland which extends towards the acid-tar lagoon. An example of the woodland to the south is shown in Photograph 14. Agricultural fields are located to the immediate east. There is a narrow zone of scrub/ tall-herb habitat which extends north of the site towards Llwyneinion Road, as indicated in Photograph 16. Otherwise to the north/ east of the application site there is a light industrial/ storage facility (with extensive areas of hard-standing) along with a domestic dwelling (Bush House).

## 2.6 Evaluation

- 2.6.1 There is no aquatic habitat suitable for breeding Great Crested Newts within or immediately adjacent to the application site. The acid tar lagoon, located approximately 80 m to the (south)west is the only known waterbody within 250 m; for the purpose of this Mitigation Strategy it is assumed that this supports a large breeding population. The application site largely represents intermediate terrestrial habitat<sup>9</sup> associated with the acid tar lagoon. A very small part of the compensation area provides distant terrestrial habitat<sup>10</sup>.

<sup>9</sup> Approximately 50-250 m from breeding pond, as per English Nature (2001).

<sup>10</sup> Approximately >250 m from breeding pond, as per English Nature (2001).

- 2.6.2 The application site (including the proposed development site) is known to support Great Crested Newts with two being recorded terrestrially within the proposed development site in 2017 (Pearce Environment 2017). However, the (largely sparse) ephemeral vegetation which dominates the proposed development site (indicated by *Target Note 4* in Tyrer Ecological Consultants (2019)/ *Appendix 2*) generally provides little or no habitat of potential value to Great Crested Newts: although the scattered bulkier plants present provide features of greater potential value for Great Crested Newts the vegetation cannot be described as dense or tussocky. Overall this resource is considered to be of low potential value for Great Crested Newts. However potential subterranean features (within the made ground) and discarded surface features are occasionally present and provide potential refugia/ hibernacula for Great Crested Newts. Limited other features within the proposed development site are of moderate to high potential value, such as occasional large debris piles and small pockets of (mature) scrub and tall-herbs.
- 2.6.3 Habitats of far greater potential value to Great Crested Newts are located outwith the proposed development site: in the POS and compensation area. Habitats providing high potential value for Great Crested Newts include woodland/ mature scrub, moderate potential value is provided by tall-herbs and occasional large brash piles, and low potential value by bare ground (this can often have brickle rubble mixed in providing refugia opportunities).
- 2.6.4 From a review of web-based mapping and aerial photography<sup>11</sup> it is evident that the vast majority of the immediate terrestrial habitat<sup>12</sup> associated with the acid tar lagoon comprises of woodland which is of high potential value. Approximately 60-75% of the intermediate terrestrial habitat also appears to comprise of woodland, with the reminder including the proposed development site itself, agricultural fields to the south and west and a small number of domestic houses/ gardens. There are no other known waterbodies on the opposite side of the application site to the acid tar lagoon to which Great Crested Newts might disperse. In conclusion therefore, the application site provides only a small fraction of the available intermediate terrestrial habitat associated with the acid tar lagoon, and the habitats present do not appear to form part of a habitat linkage between ponds or high quality foraging habitat. Whilst high quality potential foraging and refuge areas (including for hibernation are present) these are largely located outside the proposed development site, and also similar resources are available much nearer the breeding pond. The application site as a whole, and the proposed development site in particular, is not deemed likely to be part of an (important) dispersal corridor (this is confirmed by the text in *paragraph 2.1.2* above which notes that the application site is not within a 'Key Ecological Corridor' associated with the Johnston Newt Sites SAC). The proposed development site itself is not deemed likely to provide a significant (potential) foraging resource.

<sup>11</sup> For example, <https://www.google.com/maps/place/Wrexham/@53.0200742,-3.0653369,1167m/data=!3m1!1e3!4m5!3m4!1s0x487ab5d05739375d:0xd575606934cc778c!8m2!3d53.04304!4d-2.992494>

<sup>12</sup> Approximately 0-50 m from breeding pond, as per English Nature (2001).

### **3 IMPACT ASSESSMENT**

#### **3.1 Introduction**

- 3.1.1 Although the terrestrial habitat within the proposed development site is deemed to be of overall low potential value for Great Crested Newts, there are limited (largely peripheral) features which provide at least moderate/ very locally high potential value (such as occasional large debris piles and small pockets of (mature) scrub and tall-herbs). As such individual Great Crested Newts associated with the breeding population supported by the acid tar lagoon may utilise the proposed development site at some time during their terrestrial phase – this being confirmed by two being recorded terrestrially within the proposed development site in 2017. As such there is the potential for disturbance or killing of animals during any development at the site and therefore an NRW ‘development’ licence will be required in order for works to be legally carried out.

#### **3.2 Short-term impacts: disturbance**

- 3.2.1 The proposed development site is not deemed to be part of an (important) dispersal corridor, nor deemed likely to provide a significant (potential) foraging resource. Suitable features (which are limited in extent) are likely to be used by small numbers of newts largely for refuge/ hibernation purposes. Development of the site is not considered likely to result in any measurable impact on dispersal as the site does not appear to form part of a habitat linkage between ponds or high quality foraging areas. However individual animals could be disturbed or killed during any development at the site. Potential risks include newts that are present being killed or injured when construction activities commence and/ or newts accessing the site during works and being trapped in excavations or taking refuge in spoil/ waste piles and under stored materials, and subsequently being harmed.

#### **3.3 Long-term impacts: site modification**

- 3.3.1 Breeding habitat will not be (in)directly impacted by the proposed development.
- 3.3.2 The proposed development will largely result in the loss of (largely sparse) ephemeral vegetation of low potential value to Great Crested Newts, with limited other features being lost including occasional large debris piles and small pockets of (mature) scrub and tall-herbs which provide at least moderate/ very locally high potential value. Given the proposed development site represents only a small fraction of the available intermediate terrestrial habitat associated with the acid tar lagoon, low impacts on (potential) foraging resources will therefore result. As the proposal includes for soft-landscaping, including gardens/ ‘amenity areas’ and trees, habitat of greater quality (for example for foraging) may be present in the long-term. Refuge/ hibernation opportunities are also likely to exist. This may be especially the case if homeowners plant ornamental shrub beds/ trees in the future.

### 3.4 Long-term impacts: site loss/ destruction

- 3.4.1 The loss of habitat of largely low potential value to Great Crested Newts that will result due to the proposed development is not deemed likely to adversely impact the Favourable Conservation Status (FCS) of the local Great Crested Newt population in the long-term.

### 3.5 Long-term impacts: fragmentation and isolation

- 3.5.1 As the proposed development site does not appear to form part of a habitat linkage between ponds or high quality foraging areas and is not deemed to be part of an (important) dispersal corridor, there are deemed to be negligible fragmentation/ isolation impacts as a result of the proposed development. Once the development has been completed, it is likely that newts will be able to largely disperse across the site more-or-less as they currently do (assuming for example that appropriate amphibian-friendly drainage features are implemented), although the increased built development (such as the access road, driveways and the houses themselves) are likely to provide at least some barriers. However even assuming that the ability of newts to disperse across the proposed development site is diminished to some extent, the POS/ compensation area will retain significant habitat linkages to the east.

### 3.6 Post-development interference impacts

- 3.6.1 No information is currently available concerning surface water drainage features to be installed around hard-surfaced areas of the proposed housing development, however it is recognised that gully-pots have the potential to trap/ kill newts and kerbstones to prevent dispersal.
- 3.6.2 As detailed in *Section 2.1*, Great Crested Newt is an '*Annex II species that [is] a primary reason for selection...*' of the Johnstown Newt Sites SAC. There are no other qualifying features. Taking into account that the SAC is 1.3 km from the application site, there will be no direct impacts to the Great Crested Newt population supported by this site. However, it is recognised that the application site is located within the '*SAC buffer*' associated with a '*Key Ecological Corridor*' to the south. It is conceivable that Great Crested Newts which breed at the acid tar lagoon could be part of a larger meta-population that includes the SAC. As such any negative impacts to the population supported by the acid tar lagoon could have impacts to the SAC population over time. However, any such post-development interference impacts associated with the proposed development are deemed likely to be negligible, and limited to the following:
- Direct (terrestrial) predation. This is considered unlikely to increase as a result of the housing development; for example, domestic Cats, should they be kept as pets, are not deemed to be a significant known predator of Great Crested Newts.
  - Direct (aquatic) predation, for example by fish etc. The acid tar lagoon is fenced off from public access. It is therefore considered (very) unlikely that occupants of the proposed development would result in any increased likelihood of fish establishment at this site.
  - Increased recreational pressure/ disturbance. Due to the distance from the SAC to the proposed development site, there is not considered to be any likely/ measurable

potential increased recreational use (where public access is allowed) by the occupants of the proposed housing.

- 3.6.3 Overall, due to the small size of the proposed development (and even in combination with other schemes in the area), potential impacts on the (qualifying features) of the SAC are deemed likely to be negligible and not significant.

### 3.7 Predicted scale of impact

- 3.7.1 The impacts associated with the proposed development have been assessed in accordance with 'the scale of main impacts at the site level' provided by English Nature (2001). The proposed development site comprises intermediate terrestrial habitat: 'destruction' of this resource would be considered to be a medium impact, as would 'isolation caused by fragmentation'. However, the habitat within the proposed development site has been assessed as being of (largely) low potential value to Great Crested Newts, and as detailed above no measurable fragmentation impacts are predicted. As such, it is deemed more appropriate to assess this impact as low (without mitigation/ compensation). All other impacts on intermediate terrestrial habitat (such as disturbance and post-development interference) are given as low impacts within the English Nature assessment scale.
- 3.7.2 Impacts at the regional level have also been assessed as low (without mitigation/ compensation). Although large populations such as that supported by the acid tar lagoon: are deemed to be of significant value in the regional context, the scale of impact has taken into account that the proposed development is small, with limited impacts on terrestrial habitat only.
- 3.7.3 The predicted scale of impacts as detailed in the licence application Method Statement is outlined in *Table 1* below.

*Table 1 – Predicted Scale of Impact*

| Impact                        | Scale              |        |      |                        |        |      |          |        |      |
|-------------------------------|--------------------|--------|------|------------------------|--------|------|----------|--------|------|
|                               | Local (up to 2 km) |        |      | Regional (up to 10 km) |        |      | National |        |      |
|                               | Low                | Medium | High | Low                    | Medium | High | Low      | Medium | High |
| Disturbance                   |                    |        |      |                        |        |      |          |        |      |
| Habitat modification          |                    |        |      |                        |        |      |          |        |      |
| Site loss/ destruction        |                    |        |      |                        |        |      |          |        |      |
| Fragmentation and isolation   |                    |        |      |                        |        |      |          |        |      |
| Post-development interference |                    |        |      |                        |        |      |          |        |      |

- 3.7.4 All impacts at the local and regional levels are concluded to be low. Due to the small size of the proposed development site, the character of the habitat resources present and the potential value of these to Great Crested Newts, impacts at the national level are deemed to be negligible.

## 4 MITIGATION MEASURES

### 4.1 Introduction

4.1.1 Potential impacts on Great Crested Newt (and other amphibians) associated with the proposed development which are to be considered further are restricted to the following:

- Disturbance/ killing of individuals during construction/ preparatory works.
- Temporary loss of potential foraging/ dispersal resource.
- Post-development interference (increased risk of incidental capture in drainage features).

4.1.2 The proposed development will involve works that will directly affect and or modify areas of potential terrestrial habitat and therefore licensed mitigation measures are required. Mitigation measures (and compensation provision, *Section 5*) for Great Crested Newts will be the subject of a 'development' licence application to NRW. This licence application will consider in detail maintenance of the FCS of the species in this area both during construction and 'operation' phases. The following presents a summary of the detail to be provided in the licence application.

4.1.3 Measures to be implemented to mitigate for the impacts of the proposed development on the terrestrial habitat have broadly been discussed with WCBC/ NRW (*Section 1.3*) and/ or follow the principles established in Pearce Environment (2017); they are as follows:

- The proposed development site will be fenced with temporary amphibian exclusion fencing. Great Crested Newts and other amphibians will subsequently be translocated to a suitable location adjacent to the site (receptor site). The receptor site will be dual purpose as a compensation area as indicated on drawing no. P1\_15/003\_RevH and *Figure 2*, the habitat enhancement/ creation works for which are summarised in *Section 5*. Amphibians will be released into suitable cover such as scrub or dense tall-herbs.
- The amphibian exclusion fencing will be maintained for the duration of the construction phase to ensure that Great Crested Newts do not return to the proposed development site. The fencing will be removed following completion of the construction phase (including for example any soft-landscaping works and removal of waste).
- Any small-scale works undertaken outside the exclusion fencing will require the implementation of appropriate reasonable avoidance measures (RAMs) (including hand-searches) and will be supervised by a suitably licensed ecologist.
- Design and implementation of amphibian-friendly surface water features.

## 4.2 Disturbance/ Killing of Individuals

### Capture, Exclusion and Translocation

#### *Introduction*

- 4.2.1 The primary method of Great Crested Newt exclusion and translocation from the proposed development site (and habitat creation area within the compensation area) will be affected through the use of temporary amphibian exclusion fencing, combined with pitfall traps and carpet tiles. The fence (*Figure 3*) will be erected around the perimeter of the proposed development site<sup>13</sup>, as well as an additional area which is required to facilitate the habitat creation works in the compensation area; it will include all areas of proposed physical works. The alignment as provided on *Figure 3* is indicative only. On conclusion of the construction scheme (including associated landscaping and removal of waste) the temporary amphibian fencing will be removed. The fencing associated with the habitat creation works in the compensation area will be removed on completion of these works. The alignment of temporary internal fencing is also shown on *Figure 3*; this will be removed on completion of the translocation programme to allow works to proceed.

- 4.2.2 The proposed schedule for the scheme is unknown at the current time; a detailed work schedule will be provided with the licence application.

#### *Fencing and Translocation Programme*

- 4.2.3 The area within the exclusion fencing will be subject to trapping for a minimum of 60 trapping nights until five days of no capture returns have been recorded during appropriate weather conditions, although captures will be reviewed after a period of 30 trapping days<sup>14</sup>. Should capture rates justify discontinuing trapping, subject to agreement with NRW, the trapping may be considered complete at this stage.
- 4.2.4 English Nature (2001) recommends a minimum trap density of 80 traps/ hectare for a medium population and 100 traps/ hectare for a large population; 80 traps/ hectare is considered to be sufficient at this site (refer to footnote 14). As such, as the proposed development site<sup>15</sup> is approximately 10667 m<sup>2</sup> (approximately 1.1 hectares) in size a minimum of 80-90 traps would be deployed. Pitfall traps will be placed at intervals of approximately 5-10 m around the exclusion fencing, with artificial refugia (e.g. carpet tiles) being placed in-between. An additional approximately 50-80 artificial refugia will be deployed throughout the trapping area. Terrestrial searches will also be instigated at the

<sup>13</sup> Refer to footnote 2.

<sup>14</sup> 60 trapping days relates to a medium population as detailed in English Nature (2001) and was the approach utilised in Pearce Environment (2017). Despite this Mitigation Strategy assuming a large population at the acid tar lagoon (which would equate to a minimum 90 day trapping programme), taking into account the quality of the terrestrial habitat that will be impacted by the proposals, and the scale of predicted impacts as detailed in *Table 1*, the approach as detailed is deemed appropriate at this site. It is proposed that this will be confirmed with NRW as required at the licence application stage.

<sup>15</sup> The extent of the additional area of trapping required to facilitate the habitat creation works in the compensation area has not been confirmed at this stage. It is likely that this will require an update site visit to allow detailed planning of the requirements, as detailed in *Section 5*. Trap (and carpet tile) density will however follow this general approach and will be confirmed at the licence application stage.

same time as checking the traps/ carpet tiles and may be undertaken at other times, in appropriate weather conditions, to increase capture effort. Development/ habitat creation works/ associated works will not commence until the completion of this translocation.

- 4.2.5 Great Crested Newts will be transferred to the receptor site within one hour of capture. This will be undertaken using plastic buckets, which will help to reduce stress to the amphibians. Other amphibian species will be transported in separate buckets.
- 4.2.6 All pitfall traps and carpet tiles will be checked daily, at least every 24 hours (between 06.00 and 11.00 hours). This check will also encompass a check of the fencing with any breaches or damage being repaired immediately. A record of fence inspection and damage repair will be kept as evidence that the newt-proof barrier has been properly maintained.
- 4.2.7 The fence-lines will be searched and cleared of amphibians or potential refuges prior to any construction works. The exclusion fencing will not be removed/ relocated without the permission of the ecologist. Before any work starts on the site, controlled vegetation removal and hand/ destructive searches will be undertaken (see below). Any Great Crested Newts that are found will be transferred to the receptor site. A Great Crested Newt licence-holder will undertake any required handling of Great Crested Newts.
- 4.2.8 Capture of amphibians will not be undertaken during inclement weather conditions, especially when there is overnight frost. Suitable weather conditions require a night air temperature of  $>5^{\circ}\text{C}$ , ideally with recent rainfall.
- 4.2.9 On completion of the translocation the site will be released for development. The contractor will be given a tool-box talk by the licensed ecologist which will include:
- known information regarding the status of Great Crested Newt and the licence;
  - legal protection afforded Great Crested Newt and associated penalties;
  - the purpose of the amphibian exclusion fence, restrictions and what to do if it is damaged;
  - responsibilities with regards daily checks of the fence integrity;
  - identification features of Great Crested Newt;
  - (to include provision of a watching brief); and
  - the procedures to follow should a Great Crested Newt (or other amphibian) be located during the construction period.
- 4.2.10 The contractor will subsequently be required to check all fencing on a daily basis with any breaches or damage being repaired immediately; a record will be maintained on site. A monthly fence/ compliance check will be completed by the licenced ecologist. Should a Great Crested Newt be located during the construction period, all works would stop, and the licenced ecologist would attend site and remove the animal to the receptor site.
- 4.2.11 The fencing will be installed and maintained as follows in accordance with CCW (various dates) and English Nature (2001). Reasonable avoidance measures will be implemented during fence installation. The proposed fence line will be searched and cleared of

amphibians. If clearance of the fence line is required vegetation will be cut back to a height of approximately 15 cm. Fence installation will be supervised and monitored by a suitably experienced ecologist.

- 4.2.12 The temporary exclusion fencing will be installed to the correct height and depth and with an adequate 'under-lap' to prevent newts from passing underneath. The backfill will be broken up and placed turf downwards in the trench to suppress re-growth of vegetation and will be compacted to eliminate any lumps or gaps. Backfill will not remain un-compacted overnight and all trenches will be filled the same day as they have been dug in order to avoid the possibility of amphibians seeking shelter within any un-compacted soil or turf.
- 4.2.13 Exclusion fencing will have an overhang or 'top-curl' to prevent newts from climbing over the fence. The temporary fencing membrane will be 1000 gauge, UV resistant polythene sheeting or similar of sufficient width to permit the forming of an 'under-lap' and 'top-curl'.
- 4.2.14 The temporary fencing membrane will be as taut as possible without noticeable creases or folds which could allow newts to climb the fence. The fence will be secured to the supporting posts by nails and or staples. Fence-posts will be positioned on the outside of any receptor area fence. Any joins in the membrane will be 'curl-joined' and well secured to a post with pads and nails. This jointing method will continue underground as well as above.
- 4.2.15 The fencing layout will not contain gaps through which newts may pass, thus avoiding capture. Where the access point is required across a barrier, the gap will be as small as possible and an Aco stop-grid (or similar) will be installed across the vehicle entrance. An Aco stop-grid is likely to be required across at the entrance off Llwyneinion Road (*Figure 3*).
- 4.2.16 It is possible that control of vegetation will be required along the fence line to prevent the fence becoming overgrown. If required, this will be achieved by careful application of an approved herbicide licensed for aquatic use (e.g. Roundup bioactive) to a narrow strip on whichever side(s) of the fence that newts are being prevented from climbing. If it is necessary to cut the vegetation with a strimmer, care will be taken to prevent damage to newts or the fence.
- 4.2.17 Newts may seek refuge in the shrinkage cracks that will occur between the fence and the backfill; therefore, special care will be exercised when removing the fence. Should any fencing need replacement (including any that has to be replaced due to faulty installation) during the final fence removal process, then all backfill will be removed carefully by hand under the supervision of the licence-holder or agent, if it is thought that newts are present. This will minimise the risk of damaging or killing any amphibians that may be sheltering in the backfill along the fence line. In areas where barrier fencing is adjacent to the construction areas, the developer will generally be required to erect a security fence to prevent damage to amphibian fencing. Chain link or 'Heras' fencing will be used for this purpose.
- 4.2.18 Each pitfall trap/ carpet tile will be given a unique number cross-referenced to a plan drawing to allow accurate log-keeping regarding catches of newts per day. Individual compartments will also be identified by a unique code which will be marked on the plan and on the corner pegs of the compartment.

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### *Controlled Vegetation Clearance*

- 4.2.19 Towards the end of the capture period, the site will be subject to vegetation clearance whereby vegetation will be cut down to ground level in a controlled process, to be accompanied by hand-searches by the licenced ecologist. This will aim to remove cover and encourage amphibians to move and therefore be captured in pitfall traps. If considered necessary by the ecologist this process may be spread over a number of days rather than in one single operation. Long vegetation will be initially cut down to approximately 10-15 cm above ground level using hand-held tools (e.g. strimmer, brush cutter, chainsaw). No wheeled/ tracked machinery should be utilised. The cut vegetation will subsequently be carried by hand, raked up (using a spring-tined rake) or blown (using a leaf-blower) and deposited outside the application site or within a suitable storage container (e.g. skip) to be removed off site at a later date. A detailed visual/ hand-search will then be completed of the entire area by the ecologist. This search will concentrate in particular on any potential refugia such as the base of grass tussocks, around the base of tree/ shrub stumps, in leaf litter etc. Further to this initial vegetation cut and hand-/ visual-search, any remaining vegetation will be cut to ground level, again using hand-held tools, and the arisings removed off site.

### *Destructive Searches*

- 4.2.20 Further to completion of the trapping programme/ vegetation removal, and before any work starts on the site, a direct search/ destructive hand-searches will be conducted for Great Crested Newts in the development site.
- 4.2.21 Should any be present within the trapping compartments, scrub/ trees will be cut down whereby any cut logs and brash from trees/ shrubs must be carried by hand (and not e.g. dragged across the ground) to a suitable hard-standing area outside of the application site, where they can be further processed. In addition removal of bases/ root plates will be undertaken under supervision by the licenced ecologist who will undertake hand/ destructive searches as required. Trees and shrubs will be carefully extracted from the ground using a mini digger or similar machine – this will be undertaken by slowly pulling the shrubs out of the ground (rather than scooping the shrubs and roots up whole with the bucket); the ecologist will supervise this process and will search through any roots/ loose soil etc. as the shrubs/ tree bases are removed. A similar approach will be adopted in association with the removal of e.g. any concrete bases of fence posts.
- 4.2.22 Other destructive searches will likely focus on the brash/ debris piles, the edges of hard-standing, such as kerbing and/ or cracks, and destructive searches of the bases of the building/ associated features (including foundations). With regards building foundations/ bases this work may continue after the demolition of the above ground structures. Destructive searches are likely to require the assistance of an appropriately sized machine with a toothed bucket.

### *Contingency Measures*

- 4.2.23 Any small-scale works undertaken outside the exclusion fencing will require the implementation of appropriate RAMs (including hand-searches) and will be supervised by a

suitably licensed ecologist. Equally, any small-scale realignment of the perimeter fencing that may be required further to its installation and/ or any minor site preparatory works will be subject to appropriate RAMs.

#### *Receptor Site*

- 4.2.24 All amphibians caught during the translocation period (and/ or at other times during the works) will be moved to the receptor site. The proposed receptor site (*Figure 3*) is also the compensation area (with the exception of the area where a new pond will be created/ other habitat creation works undertaken). This area has been proposed as the receptor site so as to transport animals the least distance possible and includes features affording good vegetative cover.

### **4.3 Disruption of Dispersal Routes**

- 4.3.1 As the proposed development site is not deemed to be part of an (important) dispersal corridor, there are deemed to be negligible fragmentation/ isolation impacts as a result of the proposed development. However, as detailed in *Section 5* the compensation area has been designed so that it incorporates a mosaic of existing habitats (including woodland, mature scrub and tall-herbs), whilst also providing a suitable area for the construction of a pond(s). Along with the adjacent POS (which includes a similar suite of existing habitats) it will provide a corridor which will link up with immediate terrestrial habitat associated with the acid tar lagoon thereby maintaining this potential dispersal route.

### **4.4 Post-development Interference: Incidental Capture in Drainage Features**

#### Amphibian-friendly Design

- 4.4.1 No information is currently available concerning surface water drainage features to be installed around hard-surfaced areas of the proposed development. However where possible this will include permeable surfaces and or soakaways. Otherwise, and to minimise incidental capture of amphibians, any gulley-pots and kerbstones within the proposed development will incorporate an amphibian-friendly arrangement, such as the ACO wildlife kerb<sup>16</sup> and gully pot ladder<sup>17</sup>. Drainage arrangements that present a particular risk to amphibians (e.g. Beany Block combined kerb and drainage) will not be used. The aim of the ACO wildlife kerb is to provide a gap between it and the gulley-pot grill so that amphibians following the kerb-line will not fall into the gulley-pot and drown. The gully pot ladder provides a means of escape however should animals fall in. In deemed necessary 'dropped' kerbs will be provided in places so that newts can climb over them more easily; this will be confirmed at the licence application stage. The design of any other external drainage feature should be reviewed by a suitable qualified ecologist. The proposed development does not include any other features that are likely to result in incidental capture or killing of Great Crested Newts.

<sup>16</sup> <https://www.aco.co.uk/products/wildlife-kerb>

<sup>17</sup> <https://www.thebhs.org/shop/the-bhs-amphibian-gully-pot-ladder>

## 5 COMPENSATION, ENHANCEMENT & MONITORING

### 5.1 Introduction

- 5.1.1 An indicative boundary for the proposed compensation area is shown on drawing no. P1\_15/003\_RevH (*Appendix 1*) and *Figure 2*. This supports a range of existing habitats including woodland, mature scrub, tall-herbs and bare ground. Drawing no. P1\_15/003\_RevH also shows an indicative location for a pond (or ponds, refer below). Terrestrial habitat creation measures will be likely limited to areas which are either bare/ sparsely vegetated and/ or which will be disturbed as part of the pond construction works. As detailed in *Section 4.3* along with the adjacent POS (which includes a similar suite of existing habitats) the compensation area will provide a corridor which will link up with immediate terrestrial habitat associated with the acid tar lagoon thereby maintaining this potential dispersal route.
- 5.1.2 A summary of habitat enhancement/ creation works (provided to offset the loss of foraging/ hibernation resources) that are proposed is provided in *Section 5.2*. The final details will be confirmed at the licence application stage within a Habitat Creation and Management Plan (to include long-term management prescriptions)<sup>18</sup>. However, terrestrial habitat within the compensation area will largely be the subject of a non-intervention approach.
- 5.1.3 Other sub-sections detailed below are as follows:
- Section 5.3* outlines mechanisms for ensuring delivery (including the requirement for an Ecological Compliance Audit (ECA)) and details the requirement for the preparation and implementation of a Biosecurity Risk Assessment (BRA); and
- Section 5.4* provides details on post-development site safeguard including *Section 106* Agreement, and an indicative scope for long-term monitoring (of Great Crested Newts within the new pond(s)).
- The ECA, BRA and long-term monitoring proposals will be provided/ confirmed at the licence application stage.

### 5.2 Loss of Foraging/ Hibernation Resource

#### *Habitat Creation Summary*

- 5.2.1 The compensation area as described above is to be provided to offset the loss of terrestrial habitat and to compensate for any potential impacts on the local Great Crested Newt population due to the proposed development. The compensation measures will form part of the licence application to NRW. The compensation area currently supports a range of existing habitats including woodland, mature scrub, tall-herbs and bare ground (refer to Tyrer Ecological Consultants (2019)/ *Appendix 2*) and extends to approximately 5489 m<sup>2</sup>.

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<sup>18</sup> It is unknown at this stage what, if any habitat enhancement works may be required/ or proposed for the POS and/ or if long-term habitat management is to be proposed here, or within 'amenity areas' within the proposed development site. Any habitat management will need to take into account the potential presence of Great Crested Newts. This will be confirmed at the detailed design stage and included in the licence application as required.

- 5.2.2 The amphibian fencing layout in *Figure 3* includes the indicative alignment of additional external fencing to enable habitat creation works: it is within this approximate area that habitat creation/ enhancement works are proposed. Habitat creation/ enhancement will be limited to a pond (or ponds) with associated hibernacula, native scrub and grassland, as described in the next section. At the time of the walkover survey in March 2019 much of this area was either bare or supporting tall-herbs: it was for this reason that the area was chosen for pond construction. It is however recognised that the habitat resource may have changed in the interim period and as the timescale for this project is unknown at the current time it is likely that an update site visit will be required prior to the licence application. This will allow an assessment to be made of the current structure and composition of habitats present and enable final design of the pond(s) location/ associated habitat creation measures. It is however deemed likely that terrestrial habitat creation measures will be limited to areas which are either bare/ sparsely vegetated and/ or which will be disturbed as part of the pond construction works.
- 5.2.3 A Habitat Creation and Management Plan will be produced as a standalone document (and will be submitted to NRW as part of the licence application) and will provide detailed habitat creation measures as well as detailed management prescriptions (with 5-year review mechanism); the duration of the management plan will be confirmed with NRW at the licence application stage. These management prescriptions will likely include:
- Management of any sown grassland and or planted scrub to benefit Great Crested Newts (likely to be in the short-term/ whilst establishing only);
  - Management of the pond(s) to benefit Great Crested Newts.
- 5.2.4 Woodland and dense scrub habitat is of value to Great Crested Newts for foraging, dispersal and potentially hibernating. As such existing woodland/ mature scrub/ tall-herb habitats are likely to be subject to non-intervention; the management plan may however include a review mechanism whereby scrub cover is reviewed every 5 years to allow for limited clearance works should this be considered appropriate to diversify the habitat structure. Long-term monitoring of the Great Crested Newt population will be undertaken; further details are provided in *Section 5.4*.
- 5.2.5 The aim of management of the proposed compensation area will be to provide enhanced terrestrial habitat for Great Crested Newts thus reinforcing potential habitat corridors. The success of management and the results of the monitoring will be reviewed annually and reported to NRW/ WCBC (the duration of any such reporting will be confirmed with NRW at the licence application stage).

### *Compensation Area*

5.2.6 The compensation area is currently located within the ownership of the applicant (refer to *Section 5.4*). It is to be provided for the benefit of Great Crested Newts (including aquatic/ breeding habitat). The western boundary will be fenced alongside the POS with post-and-rail fencing to discourage pedestrian access. A field gate will be included in the fencing to allow for any future machine access. It will include the following habitat creation/ enhancement measures:

- A new pond(s). Drawing no. P1\_15/003\_RevH (*Appendix 1*) shows the approximate location of a pond – this is indicative only and it is likely that two smaller ponds will be created within an appropriate area of the site. This will be confirmed at the licence application stage;
- Two hibernacula (each being at least 2 m length x 1 m width x 1m height), to provide a resource for hibernating amphibians;
- A small zone of native scrub to screen the pond(s); and
- Rough (tussocky) grassland to be managed through non-intervention in the long-term.

The extent of these features will be confirmed at the licence application stage.

### Aquatic Habitat

5.2.7 The new pond(s) will provide aquatic habitat which is currently absent from the application site. It/ they will be located approximately 200 m from the acid tar lagoon, to which it/ they will be connected by suitable terrestrial habitat. It/ they will be constructed in accordance with current guidelines (English Nature 2001). The surface of any pond will be a minimum of 100 m<sup>2</sup> with gently sloping sides and up to 1.5 m deep. Lining or 'clay puddling' will likely be required to help retain water within the pond(s). It will be necessary to establish the most successful approach beforehand, possibly by digging trial pits. It will also be determined in advance how the pond is going to be filled with water, either by rain or through water being collected from another source (not a pond). It will be aimed for the pond to hold water in at least one summer in every 3 years as a minimum.

5.2.8 The pond(s) will ideally be constructed in summer. No aquatic planting is proposed; rather vegetation will be allowed to naturally colonise. Egg-laying strips may be provided as deemed necessary in the first breeding season following construction. A detailed design for this pond(s), along with long-term management requirements, will be provided in the Habitat Creation and Management Plan as part of the licence application. Monitoring of the aquatic habitat will be undertaken every 5 years after construction to review the structure/ efficacy of the pond (e.g. is it holding water?) and the establishment of aquatic plants; this will also enable review of the potential presence of invasive plants and fish. The management plan will include for contingency actions to be undertaken as required, e.g. planting of aquatic plants if they are not establishing successfully, re-modelling if not holding water, fish removal, invasive plant control, etc. Should issues such as invasive plants or fish be discovered after this period, annual monitoring will be required for a short-time thereafter, to be detailed in the management plan.

- 5.2.9 Long-term management is likely to include rotational dredging as required; approximately every 15-20 years. The two new hibernacula will be constructed adjacent to the new pond(s); this is further discussed below.

#### Hibernacula

- 5.2.10 As Great Crested Newts are known to spend a considerable proportion of their terrestrial phase either underground or just above ground under refuge sites, it is of great benefit to provide artificial sites, known as hibernacula (see photo below), which they can utilise. Two hibernacula will be created using material from the pond construction works/ development site wherever possible. A mixture of hardcore, brick rubble, logs, sleepers *etc.*, and loose topsoil will be piled into a mound which will then be covered with a topsoil cap and, ideally, a turf covering. The lower margins of the mound should be exposed to facilitate access. The design can follow that provided in Langton, *et al.* (2001). These hibernacula will contribute to the value of the proposed compensation area for Great Crested Newts as they be located in adjacent to the new ponds(s).



**Above: a hibernaculum shortly after being created.**

#### Scrub

- 5.2.11 A small zone of native scrub will be planted to screen the pond(s) from the adjacent POS. The extent of this area and proposed species-mix will be confirmed at the licence application stage. This resource will likely only require management in the short-term to enable successful establishment. Any plants that fail to establish will be replaced.

#### Grassland

- 5.2.12 Rough grassland is of value to Great Crested Newts for foraging, dispersal and potentially hibernating. Bare/ sparsely vegetated areas in the compensation area, along with areas disturbed due to the pond(s) construction, will be sown with a tussocky grassland mix, for

example EM10<sup>19</sup>. Emorsgate Seeds note that this mixture '*has been devised to create areas of tussocky grassland that, once established, require little or no maintenance. This grassland type can form a good habitat for insects, small mammals, birds, amphibians and reptiles, providing nesting sites during spring, food during summer and autumn, and shelter during winter.*' It will important that the grown is prepared appropriately in advance. Sowing will take place during the first Autumn or Spring available. Further to successful establishment this will be largely managed by non-intervention (with a long-term requirement to restrict scrub invasion). Further detail will be provided in the Habitat Creation and Management Plan.

### 5.3 Mechanisms for Ensuring Delivery

#### *Measures to Ensure Compliance*

- 5.3.1 An Ecological Compliance Audit (ECA) will form part of the NRW licence application, as well as being conditioned by any planning permission. Maintaining adequate records via a compliance audit will form an important part of ensuring that all of the requirements of the licenced mitigation scheme are achieved. The ECA will follow the '*Compliance Audit Guidance Note for EPS development licences*' and utilise the associated template<sup>20</sup>. This is based on a Natural Resources Wales/ Snowdonia National Park Authority 'Draft Provisional Ecological Compliance Audit Guidance Note' (Waring & Ellis 2012). The Compliance Audit Guidance Note will be referred to when developing the ECA; it identifies that audit requires an assessment of compliance with specified or required parameters, which may be referred to as Key Performance Indicators (KPIs). Once established each of these parameters will be used to assess component and overall performance of the licenced mitigation scheme and therefore assess compliance. It will include for remedial or contingency actions to be undertaken should such a requirement(s) be identified.
- 5.3.2 Due to the small scale of this scheme it considered that an internal audit would suffice: *i.e.* as per 'Tier 2' of the Compliance Audit Guidance Note which requires the following: '*Internal compliance audit(s) completed on behalf of a developer throughout construction. NRW licence report also submitted.*' This approach would be confirmed with NRW at the licence application stage.

#### *Amphibian-friendly design*

- 5.3.3 Refer to Section 4.4.

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<sup>19</sup> <https://wildseed.co.uk/mixtures/view/10/tussock-mixture>

<sup>20</sup> Guidance note available at: <https://naturalresources.wales/permits-and-permissions/protected-species-licensing/european-protected-species-licensing/great-crested-newt-licensing/?lang=en>. Updated July 2019 template ('GCN Master Ecological Compliance Audit Example (draft) July 2019') provided by Matt Ellis by email on 02/10/19.

*Biosecurity Risk Assessment*

- 5.3.4 A Biosecurity Risk Assessment will form part of the NRW licence application, as well as being conditioned by any planning permission. This will identify and assesses the risk posed due to the accidental spread of invasive non-native species (INNS) or diseases (in particular *Chytrid* fungus) and propose suitable control measures.

**5.4 Post-development Site Safeguard***Habitat/ Site Management and Maintenance*

- 5.4.1 Refer to details on *Section 106 Agreement* below.

*Population Monitoring*

- 5.4.2 In order to assess the success or otherwise of management of the compensation area in terms of the Great Crested Newt population it supports, a monitoring programme will be undertaken. This will be completed annually in Years 1-5 (following completion of the translocation/ pond construction) and subsequently every other year and for the life-time of the compensation area management agreement. Two survey visits will be undertaken in each monitoring year. Each visit will involve a torch survey, and egg-search, to obtain robust count data. Surveys should not be undertaken if the air temperature is below 5°C and or the wind speed is greater than Beaufort Scale 3 and or there is heavy rain. Both survey visits should be undertaken between 10<sup>th</sup> April and 15<sup>th</sup> May. Torch surveys are undertaken using a 1.5 million candlelight power clu-lite torch. It involves shining the torch into the pond at night when newts are most active and therefore more visible. A Habitat Suitability Index (HSI) (ARG 2010) would also be calculated in each monitoring year.
- 5.4.3 The monitoring programme will be subject to a rolling review following each completed monitoring year. It would be delivered by an independent specialist organisation sub-contracted by the third-party organisation responsible for the management of the compensation area. The results of the monitoring will be provided to the Cofnod/ ARC Great Crested Newt online recording system<sup>21</sup>. Monitoring of the created habitats within the compensation area will be detailed in the Management Plan.

*Post-development Mitigation Contingencies*

- 5.4.4 As described in *paragraph 5.2.8* the management plan will include for contingency actions to be undertaken as required for a five year period, e.g. planting of aquatic plants if they are not establishing successfully, re-modelling if not holding water, fish removal, invasive plant control, etc. Should issues such as invasive plants or fish be discovered after this period, annual monitoring will be required for a short-time thereafter, to be detailed in the management plan.

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<sup>21</sup> <https://www.cofnod.org.uk/LinkInfo?ID=7&AspxAutoDetectCookieSupport=1>

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*Mechanism for Ensuring Delivery of Post-development Works*

- 5.4.5 All development rights to the compensation area will be relinquished by the current owner/ applicant in perpetuity. Ownership of, and management responsibilities for, the compensation area will be passed from the current owner/ applicant to an appropriate third party organisation for the a period currently considered likely to be for 25 years/ or in perpetuity (dependant on the legal process and to be confirmed at the licence application stage). This, and the following requirements, will be ensured through a binding planning obligation under a *Section 106 Agreement* (under the *Town and Country Planning Act 1990*).
- 5.4.6 The cost of the habitat creation works (and any other requirements associated with the planning permission and licence) would be funded by the current owner/ applicant. The cost of the long-term management and monitoring of the compensation area (and for example 'amenity areas' within the proposed development, refer to footnote 18) would be funded by a mechanism whereby owner occupiers of the proposed properties would make monthly payments (for example via an annual index linked payment). The cost of this would be established further to completion of the Habitat Creation and Management Plan. Management/ monitoring costs are likely to include (but not be restricted to): habitat management (e.g. pond maintenance, grass/ scrub establishment, long-term scrub control), fence maintenance, litter picking, long-term wardening, aquatic habitat and population monitoring, and review/ update of the management plan. A contingency process would be included whereby if additional management was required should for example invasive plants or fish be located.
- 5.4.7 The third party organisation will review management of the proposed compensation area every five years and the Management Plan will be amended accordingly.
- 5.4.8 Potential third party organisations include Amphibian and Reptile Conservation (ARC)<sup>22</sup>, Holding Habitats<sup>23</sup> and North Wales Wildlife Trust<sup>24</sup>. Holding Habitats has been contacted and expressed an interest in becoming involved in the scheme (see emails provided in *Appendix 4*<sup>25</sup>). It is however suggested that a competitive tendering process is undertaken once all the required parameters are known, to ensure that the third party organisation chosen has both the necessary skill set, and for example the necessary 'winding-up' policies (in place in case of bankruptcy *etc.*), during the lifetime of the agreement. It will be necessary to legally ensure that the compensation area is passed successfully to a new third party organisation should the need arise.

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<sup>22</sup> <https://www.arc-trust.org/>

<sup>23</sup> <http://holdinghabitats.com/about-us/>

<sup>24</sup> <https://www.northwaleswildlifetrust.org.uk/>

<sup>25</sup> Holding Habitats is managed by Phil Pearce who is also Director of Ecological Land Management Ltd.

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