
Great Crested Newt Mitigation Strategy

FIVE FORDS GLASSHOUSES, WREXHAM

6th September 2020

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Balancing Ecology and Development

Client

Greenlight Environmental

Document	Five Fords Glasshouses Great Crested Newt Mitigation Strategy Report
Version	Draft 1 – 28 th August 2020
	Draft 2 – 4 th September 2020
	Draft 3 – 6th September 2020
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1.0 INTRODUCTION

SCALES Consultancy Ltd designed a Great crested newt mitigation strategy further to recommendations presented by Greenlight Environmental in the Interim EclA 13th July 2020, Five Fords Sesswick Way for Low Carbon farming 2 Limited. This strategy has been devised in relation to a project involving the proposed development of glasshouses.

1.1 Site Context

The site is accessed of Sesswick Way, a busy road to the south of Wrexham Industrial Estate. The site centre is at NGR SJ3688847980.

1.2 Site Description

The site comprises a large arable field divided into two separate compartments separated by a track bordered by a hedgerow and public right of way. Surrounding the site are a number of woodlands including mature woodland, ponds, river, mature trees and hedgerows.

1.3 Proposed Development

The proposed development will consist of two 8ha commercial glasshouses for growing salad and vegetable produce, comprised of structural steelwork and high specification glass designed for maximum light transmission. There will be a packing facility, energy centre, associated underground pipework and two reservoirs for the attenuation of rainwater from the glasshouse rooves.

1.4 Habitat Losses

The total permanent land losses to facilitate the development are predicted to be **21.74ha** with **1.948ha** of land temporarily disturbed and reinstated. There will be no loss of aquatic habitat. A total of **7.7ha** of high quality mitigation habitat will be created. A long term sustainable management plan will be implemented to promote species and habitat conservation.

1.5 Evaluation

An evaluation of the significance of GCN within the ponds surrounding the proposed development was made in relation to potential impacts of the development on the species, ponds and terrestrial habitats.

1.6 Mitigation Strategy

A strategy has been designed to protect GCN and set out long term habitat provision, management and monitoring for their sustainable conservation.

2.0 GCN STATUS

2.1 Ponds

There are no ponds or waterbodies within the red line boundary. Although there are twenty six ponds within 250m of the red line boundary.

Refer to **Table 1** for a summary of the status of the ponds surrounding the proposed development site.

Some of the ponds are mitigation ponds (2, 3, 4, 8, 9 & 14) constructed approximately 10 years ago as compensation for the construction of Sesswick Road. Ponds 3, 7, 20, 17, 18 & 19, are old. Ponds 22 and 23 were 'functional' lagoons within the Welsh Water Site with ponds 25 and 26 understood to be mitigation ponds within the Welsh Water site.

Table 1 – Pond Status Summary. See Habitat Drawing for Pond Locations

Pond	HSI Value	Pond Suitability for GCN	GCN Present 2020 eDNA result	GCN Present Historically (Cofnod records)
1	No Access	No Access	No Access	No records Identified
2	0.93	Excellent	Positive	Adults and Larvae between 2005-2015
3	0.83	Excellent	Positive	3 male in 2017
4	0.90	Excellent	Positive	Adults between 2017-2019
5	0.94	Excellent	Negative	Adults and larvae between 2014-2019
6	0.89	Excellent	Positive	Adults 2015
7	0.92	Excellent	Positive	Adults 2015
8	0.78	Good	Positive	Adults and larvae between 2014-2017
9	0.83	Excellent	Positive	Adults and larvae between 2014-2017
10 & 11	No Access	No Access	No Access	Adults, larvae and eggs in 2000 Adults between 2001 and 2009
12 Dry	No Access	No Access	No Access	Present 2000 Adults and eggs between 1999-2000
13	No Access	No Access	No Access	The following are possible records for Pond 13 or nearby. Possible Adults and larvae in 2014-2015 Possibly present in 2013
14	No Access	No Access	No Access	Adults and juveniles 2014-2017
15	No Access	No Access	No Access	Adults 2014-2015
16 Dry	-	-	-	-
17	0.92	Excellent	Positive	Male in 2017 Male and female 2000 and 2017
18	0.86	Excellent	Positive	The following are possible records for Pond 18 or nearby. Present 1992-2000
19	0.84	Excellent	Negative	Adults 2014-2015 and before 2003
20	0.90	Excellent	Negative	-
21	No Access	No Access	No Access	-
22	0.85	Excellent	Negative	Adult 2002
23	0.72	Good	Positive	-
24 Dry	-	-	-	-
25	0.59	Below Average	Positive	-
26	0.74	Good	Positive	-

Pond east of Bedfield Road on 250m buffer radius from development Grid Ref SJ3744247716	-	Not Assessed	Not Assessed	Adults, eggs, larvae – 30 records from 1999-2005
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2.2 Legal Protection and Planning Status

Great Crested Newt (*Triturus cristatus*) is protected under Schedule 5 Section 9 of the Wildlife and Countryside Act 1981 (as amended) which was amended by the Countryside and Rights of Way Act 2000 (The CROW Act) further extending their protection. In addition, this species is protected under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 and are as such regarded as European Protected Species (EPS).

The legislation affords protection to all life stages of the Great Crested Newt, including eggs, larvae, juveniles and adults.

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.

The 2017 Habitats Regulations PART 5 Licences states that

Regulation 55 – Subject to the provisions of the regulation a licensing body may grant a licence for the purpose as specified in paragraph 2 (e)

2(e)

‘preserving public health and safety or other reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment’.

Subsection (9) The relevant licensing body must not grant a licence under this regulation until they are satisfied –

- a) That there is no satisfactory alternative; and
- b) That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Favourable Conservation Status (FCS)

Favourable Conservation Status (FCS) of a species is defined by the British Standard ‘Biodiversity – Code of Practice for Planning and Development BS 42020 as when population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats; the natural range of the species is not being reduced for the foreseeable future; and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The Great Crested Newt is a UK and Local Biodiversity Action Plan species for which objectives and targets to protect and restore newt habitats and create new sites through habitat management and re-creation are set. Section 41 in England and Section 42 in Wales of the Natural Environment and Rural Communities Act 2006 (NERC Act) provide lists of habitats and species of principal importance for the conservation of biological diversity. The Great Crested Newt is included on these lists. This requires local authorities to have due regard for the presence of this species in exercising their duties.

Refer to Appendix A for Legislation and Policy.

2.3 Great crested Newt Status at and around the Development Site

Wrexham is considered to be of national importance for Great crested newt. There are numerous records for great crested newt within 1km of the site and several for the individual ponds within 250m of the site. In addition, there is a terrestrial record from 2016 for a sub-adult on the southern edge of the track. It is considered that due to the proximity of the water-bodies to each other that there is a reasonable certainty of animal interchange between them and therefore a meta-population of great crested newts exists to the south of the site, possibly spread across two main population centres. There are also numerous records for common amphibians.

There were two additional ponds identified on the boundary of the 250 buffer zone but separated from the site by barriers. One was present to the south west of Pond 21 on the 250m buffer line border which was south of the A525 road and the other to the east of Pond 7 east of Bedfield Road at Grid Reference SJ37444771 which held records of GCN adults, eggs and larvae from 1999 - 2005.

The proposed development areas comprise the main agricultural fields and the temporary disturbance areas; one each to the north, centre and west (pipelines). The main arable field compartment to the east of the track will involve permanent habitat loss by construction of commercial scale glasshouses and a reservoir. The arable compartment to the west of the track and habitats in the north west will be retained with the exception of the construction of a reservoir.

The mosaic of terrestrial habitats across and around the site including mature woodland, grassland and tall ruderal vegetation and to a lesser extent the arable land, were considered suitable for great crested newts.

The reptile surveys undertaken in July and August 2020 found GCN to be present in the on the southern field margin of the northern arable maize field, in the south west on the arable barley field margin and on the mid-east of the arable maize field margin demonstrating that there are existing pathways, corridors and habitat linkages and that the margins of these habitats are capable of supporting amphibians. This provides ample evidence that the proposed mitigation sites discussed later in the document are not isolated. **Refer to Section**

4.4 Mitigation Site Creation

3.0 EVALUATION & POTENTIAL IMPACTS

3.1 Great Crested Newt Status of Habitats

No ponds will be directly affected by the development proposals.

The total permanent land losses are predicted to be 21.74ha with 1.948ha of land temporarily disturbed and reinstated. The land to be lost is recently disturbed arable land in regular agricultural use. A remnant section of species poor hedgerow and two mature oak trees will also be lost to development.

The majority of the proposed development area is likely to constitute sub-optimal terrestrial habitat for GCN with, however, some good quality corridors of dispersal. The arable compartments are less favourable than grassland, hedgerows and woodland. The peripheral margins and the grassy track dividing the arable compartments could provide habitat linkages and foraging opportunities.

In terms of its suitability as terrestrial habitat for GCN, although it is accepted that intensively managed arable land is not a barrier to dispersal, it can regulate migration and dispersal, (Great crested newt conservation handbook NE, 2001). The arable field itself when in intensive use and depending upon the crops sown, offers little opportunities for refuge (daytime, summer or winter), few foraging opportunities and some dispersal though limited. The field margins and hedgerows do however provide habitat linkages and corridors.

Two areas of temporary disturbance for the purposes of pipeline installation will be affected. These are 1.95ha in total. They are situated to the west in primary core habitat <50m from known GCN ponds and more distantly to the north approximately 450m from GCN ponds; most of which is in primary habitat and a proportion of which is in more distant sub-optimal habitat and a grassland track (0.319ha) and footpath in the centre. These primary good quality GCN habitats are classified as such because they comprise grassland, scrub and tall ruderal vegetation. Those classified as sub-optimal comprise arable intensively managed farmland.

Both the 2020 eDNA results and the historic Cofnod records show that a GCN population or populations exist to south, south east and south west of the proposed development site. The habitats within the landscape are likely to facilitate good interchange between the ponds and general dispersal where continuity exists and where no major barriers are present. Ponds that do not currently support GCN could feasibly do so in the future based on the results of the H.S.I. Assessment.

Some of the ponds to the south east of the development were constructed in 2010 as part of the mitigation and compensation measures for the development of Sesswick Road and are under monitoring and management for the purposes for great crested newt conservation.

3.2 GCN Status

The current full population status of GCN in ponds around the site is not known. The GCN status in Wrexham is accepted to be of National Importance and of European Importance within North East Wales. In devising the mitigation strategy, the approach of considering the population to fall into the category of 'high' has been adopted. The measures proposed aim to fulfil the requirement of ensuring that the proposed development would not be likely to be detrimental to the maintenance of the population of GCN at a favourable conservation status in its natural range.

3.3 Predicting Impacts of the development on the GCN population status

Impacts have been assessed below in accordance with guidance set out in section 6 of the Great Crested Newt Mitigation Guidelines EN 2001: -

3.3.1 Pre and mid development short term impacts

There is perceived to be a general increased disturbance to habitats and species during the construction period. Site clearance, regrading, drainage work and degradation of habitats, including potential pollution of off-site nearby ponds are likely to be the main effects. There is the potential for killing, injuring or disturbing GCN.

3.3.2 Long-term impacts

Permanent loss and modification of terrestrial habitat, comprising foraging, refuge/hibernation and dispersal routes are considered to be the primary impacts. Even when ponds are unaffected directly, GCN populations can become less viable through terrestrial habitat loss and fragmentation and isolation.

Other impacts could be deemed as alteration in runoff volumes and water chemistry, changes to water quality, alteration in other amphibian and invertebrate assemblage and effects relating to biosecurity including fish introductions.

3.3.3 Post-development interference impacts

Alteration in lighting, hydrology and traffic and noise could be considered as potential impacts.

3.3.4 Cumulative Influences

Cumulative influences on existing ponds must be considered and assessed in the context. These include past, present and future potential developments, for example both the construction of Sesswick Way Road, developments at Welsh Water and the proposed new glasshouse development.

3.3.5 Positive Impacts

Positive impacts that have been identified include increased dispersal opportunities for newts from the south to the new mitigation site in the north. This could lead to a higher more viable metapopulation less prone to future threats. Furthermore, the long term management of a site designed for the benefits of GCN is considered to have more conservation and biodiversity value than that of a large intensively farmed arable compartment.

3.4 Current Conservation Status and Determining Impacts

In order to achieve long term FCS, Current Conservation Status must be assessed. Some work assessing population changes in ponds to the south and south east of the proposed development by Middlemarch as part of the Sesswick Road development has already been undertaken.

The Spatial Action Plan for Great Crested Newts in Wrexham Report Number 77 Natural Resources Wales Modelling NRW March 2017 is a Manual for Achieving Favourable Conservation Status. It provides a strategy for setting out how to achieve the greatest conservation benefit for great crested newts.

The Spatial Action Plan report sets out scoring methodology that can be used to determine the Current Conservation Status (CCS) of great crested newts at a single pond or a series of ponds and predictive modelling techniques to determine FCS for the county of Wrexham.

It uses a number of attributes and considers for assessment both positive and negative factors in relation to site protection and surrounding land use, pollution risk, human disturbance, natural succession, environmental change. The scores are derived from assessing population size, pond density, habitat quality and prospects to the pond persisting.

The distribution of pond quality across the whole population must be considered.

In accordance with the Spatial Plan, *'the impact of a project upon a great crested newt population can be assessed as the predicted change in CCS as a result of the activity'*.

In accordance with the Spatial Plan the following methodology must be adopted to assess an impact of a development:-

'1. The total CCS for the population should be calculated in absence of the proposed activity. This is calculated as detailed in Chapter 5 where each pond comprising the population is scored in terms of its population size, HSI score and number of ponds within the vicinity. The total CCS can be used to establish a baseline metric for assessing the population prior to the activity. Individual pond scores should be assessed to see if the population is in a favourable conservation status.'

'2. The CCS should be calculated for the population after the proposed activity, in the absence of any mitigation.'

'3. The difference between the total CCS before and after should be calculated in order to quantify the loss of conservation status.'

'4. Individual pond scores should be used to assess whether the population is favourable after the activity. An accurate impact assessment relies on being able to accurately predict CCS after the activity. Some aspects of this are relatively straightforward, whereas others are more difficult.'

The Spatial Plan states that ...

'The CCS of a species is considered to be the sum of all elements of its biological condition and all influences acting upon it, and can be described by the status of its:

- range/area of occupancy within the range*
- viability and abundance of populations*
- amount of habitat*
- future prospects*

'The conservation status of a species can be considered favourable when the species is prospering (in both quality and extent/ population) and with good prospects to do so in the future (Evans & Arvela 2011).'

Table 7.2 in The Spatial Action Plan provides advice for predicting the impacts of development on pond HSI scores.

The Spatial Action Plan maintains that the primary objective of great crested newt mitigation is to maintain the conservation status of great crested newts in the long term and as such it must ensure that in the very least there is no long-term loss. Because successful mitigation cannot be guaranteed, it upholds the provision of additional resources as an 'insurance' mechanism to increase the chance of success. It specifies that

'the mitigation targets should be proportional to the value of the population (i.e. the contribution of the population to overall FCS) and the severity of the predicted impact'.

The Spatial Plan goes on to say that

'The likely effectiveness of a mitigation scheme can be assessed using the same method as the impact assessment. Once the mitigation has been designed, the predicted total and relative CCS for the affected population post mitigation can be calculated and compared to that prior to the development. The aims of any mitigation scheme should be:

1. *To ensure that there is no net loss in CCS as a result of the development*
2. *To maintain affected populations at FCS*
3. *Dependent on the level of impact, to enhance the CCS of affected populations. For high impact schemes (any project involving the loss of ponds or core terrestrial habitat) the mitigation should aim to increase the total CCS by at least 1.3x the pre- development level, and ensure all affected populations are at FCS, regardless of their CCS before the development. For a moderate impact project, the mitigation should aim to increase the CCS of the affected populations. For low impact schemes, the CCS is not predicted to decline as a result of the development and therefore the mitigation will be focussed on the protection of individual animals in order to ensure legal compliance'.*

3.5 Impacts of the development on the GCN population status in relation to CCS

On balance, based on **predicting Impacts of the development on the GCN population status** above, the impact is assessed to be **Moderate-High** with no loss of aquatic habitat and the majority of the habitat lost considered sub-optimal. Some loss of **primary core habitat** is acknowledged and the close proximity of the development is noted in relation to the 'Sesswick Way' Road existing mitigation ponds. Intermediate and distant losses of poorer quality newt habitat are also envisaged. Temporary disturbance of good quality habitat followed by reinstatement are likely to exert impacts.

The CCS and the FCS of the affected GCN population to the south east of the proposed development has been taken into account and used to determine the requirements of the new habitat creation. The overall aim is to significantly increase the CSS and ensure high quality habitat creation, management and monitoring by a third party or specialist body.

3.6 Proposed Targets

In order to achieve, maintain and measure FCS, targets are set out in the following section 4.

4.0 SPECIES PROTECTION & MITIGATION RECOMMENDATIONS

4.1 General Principles

The main impacts requiring mitigation are considered to be the loss of terrestrial habitat along with interference in habitat connectivity. Other influences include temporary disturbance and reinstatement of terrestrial habitat, general disturbance effects, road layout and installation of drainage and engineering features, noise, lighting, changes in runoff and water quality affecting existing ponds.

4.2 Key Principles of mitigation

Principles of mitigation have been assessed below in accordance with guidance set out in section 7 of the Great Crested Newt Mitigation Guidelines EN 2001: -

It is recognised by the Great Crested Newt Mitigation Guidelines EN 2001 that there are two main elements –

1. **Mitigation** which is defined as practises to reduce or remove damage by for example altering the layout of the proposed development, or capturing newts to avoid killing.
2. **Compensation** which is offsetting the damage caused by the development by creation and management of new habitat and newt population.

The primary aim being to ensure that there is no detriment to conservation status of GCN. In addition, the conservation of common amphibians ought to be promoted.

The level of mitigation required is said by the Great Crested Newt Mitigation Guidelines EN 2001 to '*depend on the size and type of impact, and the importance of the population affected*'.

A full population assessment has not been undertaken within ponds surrounding the proposed development, but the ponds to the south are accepted in the very least as supporting or capable of supporting a breeding population and should be evaluated in the very least, collectively as large size class and of **European Importance**. Based on using section 5.8.5 of NE GCN Mitigation Guidelines, 'Site Status Assessment' it would qualify as of **High Importance** in terms of **quantitative assessment** in accordance with Natural England (NE) guidance. **Qualitatively**, it is categorised as of **moderate importance** because although breeding is occurring, habitats are common in the county of Wrexham and the locality of North East Wales. **Functionally**, because there is dispersal to and from other nearby populations and the site plays an important role for nearby populations, this would qualify it as of **major importance**. From a **contextual** view point, the population is not fully assessed but is thought to be either typical of that in the local area and so of **moderate importance**.

4.3 Mitigation Approach

The development would need to meet the three tests in the European Protected Species licensing process (EPSL) which includes demonstrating that there are reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment, providing evidence of no other satisfactory alternative to the development and that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range. Furthermore, the provision of the suitable compensation areas of habitat to replace that lost to development would need to be approved. NRW have advised that there is a policy of needing to provide an equivalent compensation area to that of the size of area lost to development. The provision of habitat could be achieved on site, off site but close to the site or based on a combination of both which is the chosen approach in this case.

Compensation site safeguarding will be secured in addition to long term sustainable management and monitoring implemented for a period of circa 25 years to the satisfaction of Wrexham Borough Council and Natural Resource Wales.

Mechanisms will be adopted to ensure long term secure management such as transfer of land and/or resources to an appropriate independent entity on a management agreement basis for example.

The proposals will require a European Protected Species Licence from Natural Resources Wales to legally permit the development. The impact to great crested newts has however been greatly reduced by amending the development proposals and retaining and providing as much habitat as possible. Attempts have been made to achieve this with the reduction of reservoir provision and designation of areas to the east and south as newt mitigation habitat.

An Amphibian, reptile and nesting bird Mitigation Method Statement setting out an approach for protection of species during amphibian fence installation and an Ecological Protection Statement including pollution control measures are included in Appendices D & E.

As a precautionary approach it is considered that a reasonable avoidance measures scheme should be followed to ensure that there would be no impact on potential reptiles, great crested newt or nesting birds using the site during Otter/GCN fence installation. The method statement outlines the need for a preliminary search for the presence of amphibians, reptiles, badger setts and nesting bird activity to be undertaken by an ecologist prior to the access of any plant or machinery and sets out details for the need for ecological Tool-Box talks for site contractors.

Appropriate levels of mitigation and compensation requiring EPS licence for the development include:

- The exclusion, trapping and translocation of GCN and all amphibians/reptiles in all habitats to be affected by development with a post-translocation management and monitoring period of 25 years with the mitigation sites managed and monitored by an appropriate organisation.

Suitable receptor sites have been identified to the north west and south and east of the proposed development and trapping and translocation would take place between March and October. Receptor Mitigation Site creation will be undertaken in advance of trapping and release of GCN in order to ensure that the habitats are in a suitable condition to support them.

The GCN status in Wrexham is accepted to be of National Importance and of European Importance within North East Wales. The following key elements and objectives are proposed:

- The minimum number of trapping nights for a small population is 30 days, increasing to 60 for a medium population and 90 days for a large population (NE, 2001) and therefore the proposed trapping regime will consist of 60 days given the sub-optimum nature of the majority of the arable habitats, with increased effort in areas of primary habitat such as field margins, grassland and scrub along with night time terrestrial searches for amphibians using a high powered torch by the ecologist;
- All amphibians will be translocated and released in appropriate conditions at the receptor mitigation site;
- The NE 2001 guidelines specify an industry standard trapping density of 100 traps/ha for a large population. The trapping design is bespoke and based on an assessment of the quality of the habitat across the various parts of the site. The density shall be set at 130 traps/ha where increased effort is to be made in areas of primary habitat such as field margins, grassland and scrub with pitfall traps concentrated justifiably on the inside of the perimeter GCN fence in arable habitat spaced at 5m intervals and bolstered by the use of

alternately placed carpet refugia for increased capture effort. Details of capture, exclusion and fence layout will be set out in the GCN method statement that accompanies the NRW EPS licence application;

- Exclusion of amphibians for the duration of construction including temporary disturbance areas;
- Reinstatement of habitats temporarily disturbed;
- Retain and enhance existing terrestrial habitat to sustain newts;
- Create new ponds (of greater diversity than those currently present) and suitable terrestrial habitats, e.g. scrub, grassland, woodland and hibernacula within the designated mitigation areas.

The detailed layout of the development scheme and mitigation habitat creation has been tailored to retain and improve as much habitat and connectivity as possible. Avoidance measure set out in **Appendix D** – Amphibian, Reptile and nesting bird Mitigation Method Statement aim to afford protection to GCN during habitat creation and GCN fence installation. **Appendix E** – Ecological Protection Statement sets out measures to protect habitats from pollution and damage.

Independent auditing of the licenced work is proposed and a biosecurity risk assessment will be undertaken and incorporated into the licence application and subsequently implemented. See **Appendix B** for outline **independent ecological auditing and compliance considerations**. Refer to **Appendix C** for outline proposals for **biosecurity measures**.

All work will be under the direction and supervision of the licenced ecologist and all personnel on site will receive a **tool box talk** regarding the legislation, measures for protection, protocol and significance of GCN at the site.

Monitoring of the reservoirs will be undertaken annually to assess for fish and invasive plants. Measures will be devised and implemented to control fish / invasive plant colonisation and appropriate corrective action taken.

However, if reservoirs remain open to GCN colonisation, de-sedimentation or desilting operations will consider the potential presence of GCN and avoidance of harm measures employed.

4.4 Mitigation Site Creation

It is proposed that two mitigation sites with a combined size of **7.711ha** will be created and managed and monitored for a period of 25 years. Mitigation Area 1 to the north west is **3.2374ha** and Mitigation Area 2 is **4.474ha**. These mitigation areas are to be created in land currently under arable use. The total permanent land losses to facilitate the development are predicted to be **21.74ha** with **1.948ha** of land temporarily disturbed and reinstated. The creation of **7.7ha** of what will constitute high quality habitat with long term sustainable management designed to promote the conservation of GCN more than compensates for the loss of **21.74ha** of arable land where disturbance of the vegetation and soil is high and structural and species diversity is low with little opportunities for newts to forage, shelter, disperse and hibernate.

Appropriate areas to the north west and an area to the south and east of the proposed development have been carefully selected as GCN mitigation habitat sites named Mitigation Site 1 (north) and Mitigation Site 2 (south and east). They are currently intensively managed arable farmland. They are bordered by mature woodland, river corridor, grassland, scrub and ponds.

A total of **4 ponds** in a cluster to the north and **8 ponds** in the east and south approximately 150-300m² each (ponds of 100-300m² are considered to be preferable for GCN) will be established. Terrestrial habitat creation

will include woodland establishment, native species rich hedgerows, species diverse grassland of varying structure, species diverse wet grasslands on the pond margins and hibernacula and refuges.

Habitat corridors will be maintained to encourage dispersal from the south and east to the north. A track of 565m in length and about 5m wide (0.32ha) consisting of a modified tall ruderal grassland mosaic and a hedgerow will be temporarily disturbed and reinstated and protected. Links will also be maintained between Mitigation Areas 1 and 2 on the north east with woodland belt and species rich grassland establishment.

Habitat creation also includes the planting of a new hedgerow of 565m in length and native woodland and scrub establishment.

Management will be implemented to achieve long term habitat sustainability and appropriate condition for newt conservation and capable of supporting reptiles and a range of other priority species of principle importance.

4.5 Summary of Habitat Losses, Temporary Disturbance and Creation

Table 2 Sets out the areas of habitat losses, disturbance and mitigation site creation.

Table 2 Summary of Habitat Losses, Temporary Disturbance and Creation

Habitat Type	Permanent Losses (ha)	Temporary Disturbance	Created Mitigation Area 1	Created Mitigation Area 2
Aquatic Habitat (excluding reservoirs)				
(ha & number newt ponds)	0	0	0.08 (total of 4 ponds)	0.23 (total of 8 ponds)
Terrestrial Habitat				
Grassland/ruderal mosaic (ha)	0	0.88	2.61 species rich grassland	3.83 species rich grassland
Woodland (ha)	0	0	0.21	0.41
Arable (ha) (excluding arable lost to new mitigation area)	21.75	0.87	0	0
Hedgerow (m)	95 (remnant isolated in centre of arable field)	30	-	565 (outside Mitigation area) 1657 trees and shrubs
Scrub (ha)	0	0.2	0.33	0
Woodland Belt (m)	0	0	-	325 (36 trees)
Mature Trees	2 (or possibly 3)	0	-	See Woodland Belt

Key

Mitigation Area 1 is a total area of 3.2374ha made up of	Ponds, grassland, woodland and scrub
Mitigation Area 2 is a total area of 4.474ha made up of	Ponds, grassland and woodland
Total Permanent Losses	217,466m ²
Temporary Disturbance losses	19,483 m ²

4.6 Proposed Targets

The proposed targets for the ponds within the GCN mitigation areas and Ponds to the south of the development are as follows:

- For all new Glasshouses Mitigation Ponds the HSI score should be aim to be between Good and Excellent (0.7+);
- Proposals will aim to ensure that ponds that supporting great crested newt populations prior to the development should continue to support them at least equal to the population prior to works commencing;
- All ponds that were created as aquatic mitigation habitat should support great crested newt populations with a target of 'medium' class size;
- The overall population level for the new Glasshouses mitigation area and ponds to the south collectively should be greater than the overall population (ponds deemed to be with 250m of each other) and greater than for the metapopulation (ponds deemed to be within 500m of each other) that existed in the south prior to works commencing.

5.0 HABITAT CREATION

Drawing Five Fords Glasshouses Ecological Mitigation Sites Habitat Creation PSC/FFG/007 dated August 26th 2020 illustrates the proposed habitat layout and species compositions including seed, woodland, scrub and hedgerow mixes. It provides detail on the proposed pond creation profiles and hibernacula construction.

5.1 Woodland and Trees

Trees and shrubs within the woodlands will be planted at a spacing of **1.5 – 2.0 metres** in groups of 3 – 5 of the same species. They will be fitted with protective tree guards.

Woodland Tree and Tree Belt planting mix

Scientific name	Common name	% mix
<i>Quercus robur</i>	English Oak	10
<i>Acer campestre</i>	Field Maple	15
<i>Betula pendula</i>	Silver Birch	10
<i>Alnus glutinosa</i>	Common Alder	10
<i>Sorbus aucuparia</i>	Rowan	5

5.2 Woodland Understory and Scrub

Shrubs within the woodlands will be planted at a spacing of **1.0 – 1.5 metres** in groups of 3 – 5 of the same species and mainly confined to the edges to create a natural profile. They will be fitted with protective tree guards.

Woodland understory and scrub planting mix

Scientific name	Common name	% mix
<i>Crataegus monogyna</i>	Common Hawthorn	15
<i>Corylus avellana</i>	Hazel	10
<i>Prunus spinosa</i>	Blackthorn	10
<i>Salix caprea</i>	Goat Willow	5
<i>Ilex aquifolium</i>	Holly	5
<i>Rosa canina</i>	Dog Rose	5

5.3 Hedgerows

Planting will be in staggered double rows of 10 plants per metre run. They will be fitted with protective tree guards.

Hedgerow planting Mix

Scientific name	Common name	% mix
<i>Crataegus monogyna</i>	Common Hawthorn	70
<i>Corylus avellana</i>	Hazel	10
<i>Rosa canina</i>	Dog Rose	5
<i>Prunus spinosa</i>	Blackthorn	5
<i>Acer campestre</i>	Field maple	10

Planting would be undertaken in the dormant season between November and March and only whilst the soil is free from ground frost, snow and waterlogged conditions.

All landscaping areas will be set out and demarcated prior to the commencement of works.

The position of underground and overhead services including gas pipes, cables, drains, sewers and other equipment will be established and care taken to avoid damage. No planting or cultivation work will take place within the specified easements.

All specimens would be nursery grown native stock in a well grown, healthy form and be free from pests and diseases. Root systems would be in good state and free from damage and/or desiccation and would be adequately protected during transit and handling. The plants shall contain the correct proportion of fine fibrous rootlets and be in a suitable condition to ensure successful transplantation.

5.4 Wildflora Seed Mix for Species Rich Grasslands

Having been stripped of the top organic layer, the bare soil will be locally scarified and seeded with the following mix at a rate of 5g/m²:

Wildflowers 10%

Botanical Name	Common Name	Composition by %
<i>Achillea millefolium</i>	Yarrow	4
<i>Anthyllis vulneria</i>	Kidney Vetch	4
<i>Daucus carota</i>	Wild Carrot	5
<i>Lotus corniculatus</i>	Bird's Foot Trefoil	10
<i>Plantago lanceolata</i>	Ribwort Plantain	10
<i>Primula veris</i>	Cowslip	10
<i>Vicia sativa</i>	Common Vetch	5
<i>Agrimonia eupatoria</i>	Agrimony	10
<i>Centaurea nigra</i>	Common Knapweed	8
<i>Leucanthemum vulgare</i>	Ox-eye Daisy	12
<i>Medicago lupulina</i>	Black Medick	4
<i>Prunella vulgaris</i>	Self-heal	13
<i>Ranunculus acris</i>	Meadow Buttercup	5

Grasses 90%

Botanical Name	Common Name	Composition by %
<i>Agrostis capillaris</i>	Common Bent	15
<i>Cynosaurus cristatus</i>	Crested Dogstail	21
<i>Festuca rubra ssp. rubra</i>	Red Fescue	18
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	7
<i>Festuca pratensis</i>	Meadow Fescue	29
<i>Poa pratensis</i>	Smooth Stalk Meadow Grass	10

5.5 Wildflora Seed Mix for Wetland Pond edges

Ladies bedstraw *Galium verum*, ragged Robin *Lychnis flos-cuculi*, lady's smock *Cardamine pratensis*, sheep's sorrel *Rumex acetosella*, harebell *Campanula rotundifolia*, marsh marigold *Caltha palustris* and water mint *Mentha aquatica*.

6.0 HABITAT MANAGEMENT AND MONITORING

6.1 Management Objectives

- Maintenance of grassland areas to minimise invasive weed growth while introducing a sympathetic management regime to encourage other priority species;
- Replacement of all failed trees and shrubs in woodland, scrub and hedgerows during the establishment phase;
- Removal of tall and herbaceous vegetation around planted areas to minimise soil moisture competition;
- Promotion of rapid tree and shrub growth and reducing the risk of pest damage;
- Promotion of species rich wet meadow grasslands;
- Management of ponds for the maintenance of the great crested newt population at a favourable conservation status;
- Control of invasive plants in the ponds;
- Maintenance of aquatic vegetation cover suitable for GCNs;
- Maintenance of habitat connectivity to promote newt dispersal;
- Maintenance of fencing, drainage infrastructure, footpaths and access points.

6.2 Species Rich Wetland Meadow Grassland Management

Once an established sward is achieved grasslands will be trimmed to a height no lower than 75mm once annually in either April or May (following an ecological assessment for nesting birds). Grasslands will be cut with a mower with the cutting bar specially adjusted to be raised .

A zoned management approach will be taken to grassland management leaving some areas un-mown at different times of the year to encourage structural diversity to provide habitat for nesting birds, encourage late flowering species to seed and to provide refuges for insects.

Meadows will be cut once per year with arisings being raked off and either removed from site and/or some placed on top of or near the hibernacula.

Mowing will not be undertaken within the immediate vicinity of the ponds but periodic vegetation management to facilitate access for monitoring will be undertaken.

6.3 Pond Monitoring, Management and Maintenance:

- Ponds will be monitored annually in spring by inspection during the monitoring surveys or separately if not being surveyed for great crested newts that year and should any one species become dominant the spread will be controlled through hand pulling of encroaching vegetation in November -January to maintain no less than 60% open water;
- The ponds will remain free of any over-shading and leaf litter;
- The ponds will be fenced and secure from public interference therefore dumping of rubbish / litter will be unlikely; however, any rubbish found during annual monitoring will be removed;
- In the event of the ponds not retaining water, they will be repaired.

- The ponds and reservoirs will be monitored for the presence of fish and invasive plant species and should they become present methods will be implemented to ensure they are safely eradicated.
- In the event of fire, acute pollution or other major damage, methods will be implemented to reinstate the pond.
- Fencing will be maintained around the ponds to discourage public access.

6.4 Woodland Management to Proposed Woodland

- Ring weed all establishing trees and shrubs with approved glyphosate herbicide applied at manufacturers recommended rates annually if required, to maintain a weed free zone within a 0.5m radius of the base of each plant. This shall include weed growth within the spirals; where weeds must be carefully removed by lifting the guard and folding the weeds out onto the ground where they can be sprayed;
- Where appropriate a Controlled Droplet applicator (CDA) or Knapsack sprayer with a shield shall be used to minimise spray drift (No herbicide will be used in the vicinity of ponds);
- Application will be limited to once a year in the months of either April or May to ensure no terrestrial newts are adversely affected.
- Should any trees die or become diseased during the aftercare phase they will be replaced with a tree of the same species and size
- Selective thinning and pruning of scrub and woodland and woodland planting blocks reaching approximately 10 years will be undertaken to promote species and structural diversity.

6.5 GCN Monitoring

- Monitoring of the GCN population in the 12 new mitigation ponds will be carried out annually for the management and monitoring duration of 25 years.
- Monitoring will consist of egg searches and two GCN torch count visits annually.
- Common species of amphibian and reptile will also be recorded.
- Invasive species will be recorded and control/eradication measures implemented accordingly.
- An annual assessment of pond aquatic/marginal vegetation cover, fish, wildfowl and invasive species will be carried out.
- An annual inspection of terrestrial habitats will be undertaken and records kept to determine management prescriptions.
- The results will be entered onto the Cofnod online Wales recording system.

6.6 Annual Report

- A report summarising the management and results of the monitoring undertaken in the preceding year will be submitted annually to WCBC and NRW in December.
- An annual meeting will be held with the management organisation, WCBC and NRW.
- Management and monitoring will be reviewed every 5 years and appropriate corrective action and adjustments will be made in liaison with WCBC and NRW.

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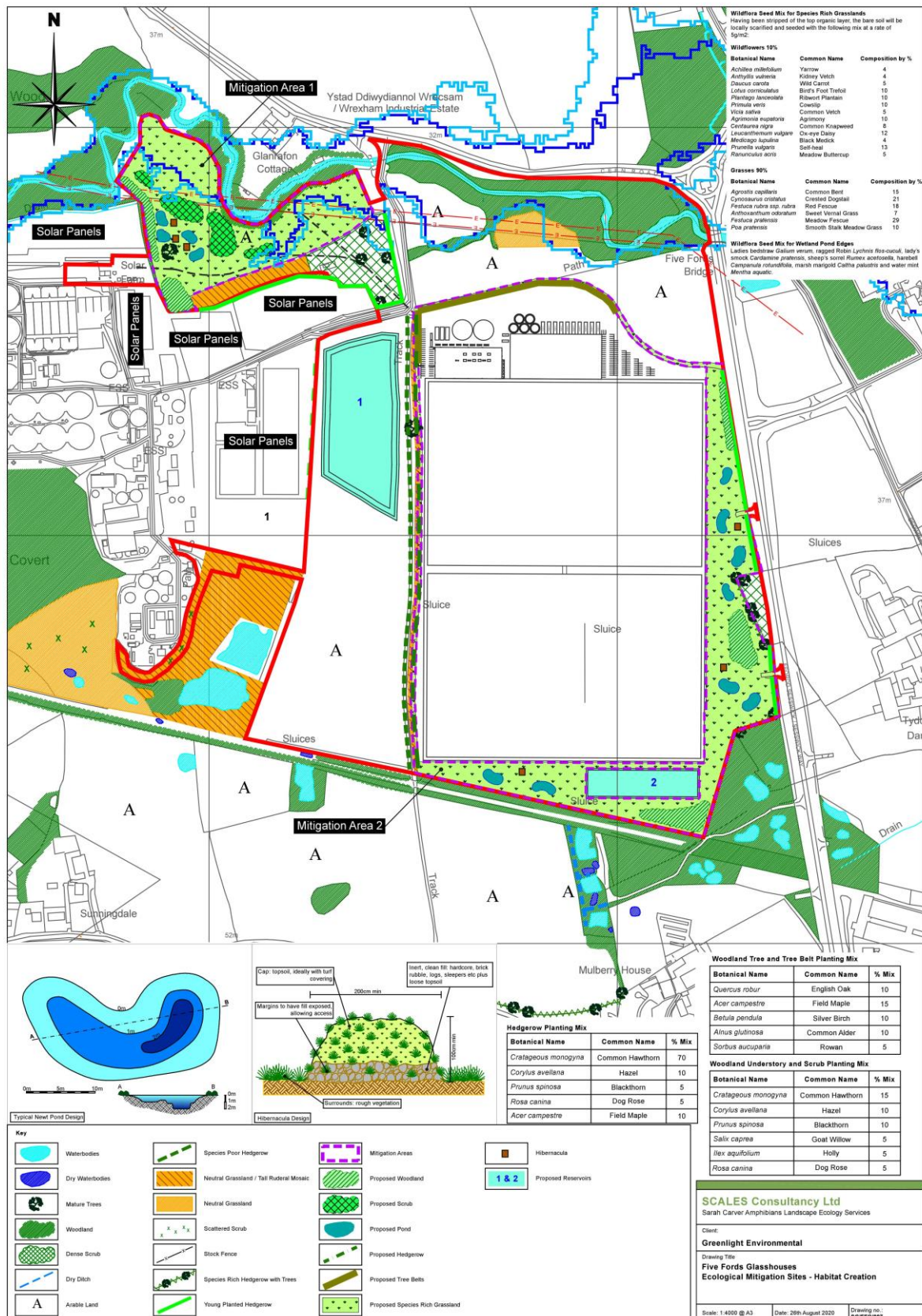
Countryside Council for Wales DRAFT Provisional Ecological Compliance Audit Guidance Note, Version 7, November 2012

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Five Fords Glasshouses Phase 1 Habitat Plan SC/FFG/001A dated July 16th 2020 illustrating the Locations and Numbering of Waterbodies



Five Fords Glasshouses Ecological Mitigation Sites Habitat Creation PSC/FFG/007 dated August 26th 2020



APPENDIX A - LEGISLATION & POLICY

Great Crested Newt Legislation and Policy

Great Crested Newts are protected under section 9 and listed on schedule 5 of the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000 (CROW Act) which further extends their protection). They are also classed as European Protected Species listed on Annexes II and IV of the European Union Directive on Natural Habitats and Wild Fauna and Flora (Council Directive 92/43/EEC). This is implemented in the UK by The Conservation of Habitats and Species Regulations 2017 (as amended). They are on Schedule 2 of the Habitats Regulations which provide full protection under Regulation 40(1). The legislation is relevant to all life stages of the Great Crested Newt including eggs, larvae, juveniles and adults.

Under this 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;
- Sell or attempt to sell any such species.

In order to undertake surveys for Great Crested Newt, a surveyor must hold an appropriate licence issued by Natural England, Natural Resources Wales or Scottish Natural Heritage accordingly.

The Great Crested Newt is a UK Biodiversity Action Plan species for which objectives and targets to protect and restore newt habitats and create new sites through habitat management and re-creation are set. Section 41 in England and Section 42 in Wales of the Natural Environment and Rural Communities Act 2006 (NERC Act) provide lists of habitats and species of principal importance for the conservation of biological diversity. The Great Crested Newt is included on these lists.

The 2017 Habitats Regulations PART 5 Licences states that

Regulation 53 – Subject to the provisions of the regulation a licensing body may grant a licence for the purpose as specified in paragraph 2 (e)

2(e)

'preserving public health and safety or other reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment'.

Subsection (9) The relevant licensing body must not grant a licence under this regulation until they are satisfied –

- a) That there is no satisfactory alternative; and
- b) That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

APPENDIX B ECOLOGICAL COMPLIANCE

A suitably qualified and experienced external ecological compliance auditor is to be appointed.

Generic Key Performance Indicators and evidence required:

No	Performance Indicator	Evidence Required	Pass (Yes/No)	Notes/Dates
1	Licence available for inspection by any police constable, employee of the Welsh Assembly Government or employee of the natural Resources Wales (NRW) or authorised persons on demand.	Licence is available for inspection on site.		
2	Before starting work the licensee will advise NRW Species Officer of the date the works will start.	Written or electronic documentation of notification of start of works.		
3	No agent of the licensee shall act under licence unless they are in possession of a letter signed by the licensee appointing them by name as the duly accredited agent of the licensee for the purposes of this licence, and shall carry with them the said letter and a copy of this licence and shall produce them to any police constable or employee of NRW or other authorised person on demand.	All relevant accredited agents have copies of licence holder's letter of authorisation. Licence holder's letter is available for inspection.		
4	A suitably experienced licensed ecologist will be appointed and retained during the life time of this licence to provide on-site advice.	Letter, contract or other document outlining the appointment of an Ecologist Log (end of project) shows that Ecologist has been retained during lifetime of licence		
5	Prior to the start of any works on site, all site workers will be inducted by the Project Ecologist. This Induction/Tool box talk will cover the legal status of the species, the method of working, and action to be taken if protected species are encountered.	Copy of documents from ecological induction, showing content of induction List of induction attendees		

No	Performance Indicator	Evidence Required	Pass (Yes/No)	Notes/Dates
6	Preparation and implementation of the bio-security risk assessment	Bio-security risk assessment is available for inspection. Log of implementation of bio security measures is available for inspection. Log shows that bio security measures have been implemented Field observation shows that physical evidence of bio security measures is available e.g. footwashes		
7	Implementation of mitigation and compensation measures including: (i) Land transfer; (ii) Financial payments identified under Section C.1 of the Method Statement; (iii) Habitat creation /enhancement; (iv) Submission of Management Plan (v) Implementation of the management plan	Log of implementation of mitigation and compensation measures is available for inspection. Log shows that mitigation and compensation measures have been implemented Field observation shows that physical evidence of mitigation and compensation measures is available e.g. presence of ponds, hibernacula		
8	Condition and ecological functionality of the compensation/receptor site: - Has the compensation/receptor site been subject to appropriate management during construction?	Log of management activities is available for inspection. Log shows that appropriate management activities have been implemented Field observation shows that physical evidence of management activities is available e.g. presence of newly created ponds and hibernacula		

No	Performance Indicator	Evidence Required	Pass (Yes/No)	Notes/Dates
9	Implementation of long term proposals in respect of (i) Long term site security (e.g. land transfer, local land charge, Wildlife and Countryside Act Section 39 Agreement; (ii) Long term monitoring (iii) Long term site management (iv) Long term wardening (v) Resourcing of (i) – (iv) NB Not all schemes will require all of the above	(i) Long Term Site Security Has land transfer or other legal interest proposal been implemented? Has the mitigation/compensation site been listed as a local land charge? Have proposed legal agreements and contracts been completed? (ii) Long Term Monitoring Has post project long term monitoring been actioned as per the Method Statement or as conditioned? Have results been passed to regulators and the local records centre? (iii) Site Management Works Have site management works been undertaken in accordance with the provisions of an approved or conditioned management plan? Are site management works maintaining the ecological functionality of the mitigation/compensation site? (iv) Wardening Have wardening requirements been implemented to proposed timescales and in accordance with submitted Method Statements? (v) Resourcing Has submitted financial resourcing, to facilitate mitigation/compensation,		

		monitoring, site management and/or wardening, been carried as stated in the Method Statement?		
10	Implementation of surveillance or monitoring of schemes, pre, during and post development.	Log of surveillance and monitoring activities is available for inspection. Log shows that surveillance and monitoring have been implemented pre, during and post development.		

Based on Countryside Council for Wales DRAFT Provisional Ecological Compliance Audit Guidance Note, Version 7, November 2012

No	Performance Indicator	Evidence Required	Pass (Yes/No)	Notes/Dates
11	Names of Appointed Staff	Log to include: Ecologist Details Assistants Details GCN Fence Contractors Mitigation Site Habitat Creation Contractors Mitigation Site Management Company Details		

APPENDIX C BIOSECURITY RISK ASSESSMENT

- **Introduction**

During consultation regarding the GCN mitigation for this site, NRW requested that invasive non-native species should be considered. A bio-security risk assessment is required to be undertaken to minimise the risk of importing to the site invasive or non-native species.

This document tabulates those species that have been identified as having the potential to be imported during the construction phase of the project. The likely pathways and Operational mitigation have also been identified.

An activity risk assessment has been conducted for Great Crested Newt monitoring following the completed mitigation.

The format for this risk assessment was provided by NRW.

This document will be appended to the contractors' Construction Method Statement for use on site.

Reporting and Logs

A detailed log of biosecurity methodology and actions will be made during the construction and mitigation site management and monitoring period.

Records of non-native species identified at the site are to be submitted to the online recording system Cofnod annually.

- Invasive non-native species risk assessment Considerations**

Potential Non-Native Species	Potential Contamination Routes	Likelihood of Risk	Operational Procedures and Mitigation Actions to reduce risk
Himalayan balsam	Spread of species via construction machinery/ movement of soil.	High. Himalayan Balsam is known to be present on site.	Ensure contractors know what Himalayan Balsam looks like. If any plants are identified these should be pulled up and left to dry before the seeds set (July/ August). Locations of Himalayan Balsam to be marked on site by ecologist and avoided.
	Introduction of seeds via contaminated soil. Consider off site spread.	Low. There are no requirements to import soil.	Machinery and equipment used on site to be thoroughly cleaned before transportation to site and in between locations on site using brushes and pressure washers off site with debris disposed of appropriately. Cleaning at the end of the project needed to avoid off site spread.
Japanese knotweed	Spread of species via construction machinery/ movement of soil.	High. Japanese knotweed is known to be present on site.	Ensure that contractors know what Japanese knotweed looks like. If it is identified on site, refer to the Environment Agency's Japanese knotweed Code of Practice. Locations of Japanese Knotweed to be marked on site by ecologist and avoided.
	Introduction of seeds via contaminated soil. Consider off site spread.	Low. There are no requirements to import soil.	Machinery and equipment used on site to be thoroughly cleaned before transportation to site and in between locations on site using brushes and pressure washers off site with debris disposed of appropriately. Cleaning at the end of the project needed to avoid off site spread.

Potential Non-Native Species	Potential Contamination Routes	Likelihood of Risk	Operational Procedures and Mitigation Actions to reduce risk
Garden escapes e.g. (Crocasmia and Spanish Bluebell)	Spread of species via construction machinery/ movement of soil. Introduction of seeds via contaminated soil.	Low. Not known to be present on site. Low. There are no requirements to import soil.	Ensure contractors know what Crocasmia and Spanish Bluebell look like. Construction vehicles to keep to established routes and park on hardstanding roads or identified agreed locations.
Invasive non-native aquatic plant species such as (Water Fern, Parrot's-feather, Floating Pennywort, Canadian Waterweed, Curly Waterweed, Nuttall's Waterweed, Least Duckweed, New Zealand Pigmyweed)	Spread of species via construction machinery/ movement of soil/water. Introduction of seeds via contaminated soil/water.	Low. No aquatic habitat on site. None are known to be present on site. Low. There are no requirements to import soil/water.	Ensure contractors know what these species look like and that equipment and protective clothing has been cleaned/sterilised/disinfected prior to use near water features or construction of ponds.
Chytrid fungus	Spread to site through the movement of soil, water and/or equipment.	Low. Not known to be present on site. Low. There are no requirements to import soil/water.	Clean/sterilise/disinfect any equipment and protective clothing prior to use near water features and between separate waterbodies. Refer to ARG-UK Advice Note 4 for generic guidance in respect of amphibian disease precautions.

• **Pond Monitoring Activity Risk Assessment**

Activity	Risk (High, Medium, Low)	Control measures	Risk after control measures implemented	Control measure in place	
				No	Yes
Torch surveying	Medium - High	- Avoid entering the pond(s) wherever possible. - If entering a pond, ecologists are required to clean equipment, boots/waders and clothes before entering site, after each survey and between waterbodies.	Low	☐	☒

• **Spatial activity risk assessment**

Factor	Number	Risk	Score
Total number of ponds to be surveyed per annum	1 – 10	Low	☐ 1
	10 – 100	Medium	☒ 2
	100 +	High	☐ 3
Geographical extent of all surveys carried out per annum	0 – 1 km ²	Low	☒ 1
	1 – 10 km ²	Medium	☐ 2
	11+ km ²	High	☐ 3

Overall score of **3** out of a maximum of 6.

(Adapted from a General Format provided by NRW)

APPENDIX D – AMPHIBIAN, REPTILE AND NESTING BIRD MITIGATION METHOD STATEMENT

Purpose

As a precautionary approach it is considered that a reasonable avoidance measures scheme should be followed to ensure that there would be no impact on potential reptiles, great crested newt or nesting birds using the site during Otter/GCN fence installation and mitigation site habitat creation. The procedures will be followed to significantly reduce the risk of causing an offence under current statutory legislation.

The statement as described below broadly follows the approach of checking and reducing available amphibian, reptile and nesting bird habitat thus minimising the likelihood of their presence during otter/GCN fence installation and in addition an ecologist searching habitats by hand and visually examining all areas prior to this work.

Reasonable Avoidance Measures Procedures for Otter/GCN fence installation

1. An ecologist will be retained during the project to provide advice and recommendations.
2. Prior to the commencement of any works, staff and contractors will be informed of the potential presence of reptiles and the associated legislation. Staff will be informed that they will need to cease work immediately and consult the appointed Ecologist in the event that the presence of an amphibian, reptile, nesting bird or any other significant wildlife in the operational area is suspected.
3. A tool box talk will be provided to convey relevant wildlife legislation and appropriate protective measures that need to be employed by operational and construction staff.
4. A preliminary search for the presence of amphibians, reptiles, badger setts and nesting bird activity will be undertaken by an ecologist prior to the access of any plant or machinery. The proposed route of access and fencing routes will be examined for features which have the potential to support reptiles – rubble, debris, log piles, wood brash piles, tussocky grassland, tree stumps and any refugia sites for example. All such features will be closely searched by hand prior to the access of machinery and plant. The ecologist will be present to undertake hand searches and supervision on each day that work is undertaken. Any refugia such as bricks or wood for example will be lifted, examined and removed from working areas.
5. All vegetation within working areas/fence routes will be cut so as to render it less desirable for great crested newts and reptiles to avoid harm during fence installation.
6. Prior to the commencement of vegetation cutting and GCN/otter fence installation, the location of the proposed GCN/otter fence installation work will be searched by hand for the presence of amphibians, reptiles and the site will be checked for nesting birds.
7. In the event that excavations are to be left exposed overnight or for a long period of time then a stick/ramp or plank (whichever is appropriate) will be placed in the excavation to aid the escape of any animal falling in and becoming trapped.
8. The above measures will be undertaken immediately prior to commencement of any works and any required mowing 1 weeks prior to the commencement of the works – this will minimise the opportunity of fauna entering the area in the time of initial survey and inspection and the clearance/construction operations.

9. The Ecologist will be present at the commencement of the works and must be contacted in the event of any potential wildlife issues.
10. Common species of amphibian and reptile will be moved to safe havens on site unaffected by development activities.
11. Construction staff will remain in contact with the ecologist throughout the works.
12. In the event that a protected species is discovered at the site, works will cease and the ecologist will provide advice and recommendations in accordance with the appropriate statutory wildlife legislation.
13. Relevant authority approvals, permissions and protected species licences will be sought if necessary.

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APPENDIX E ECOLOGICAL PROTECTION STATEMENT

The aim of the scheme outlined in this document is to set out measures to protect habitats within the surrounding environment during the construction phase of the development and reduce the risk of pollution. Section 11 of the NPPF sets out the overall policy in relation to 'Conserving and Enhancing the Natural Environment' with paragraph number 109 stating that 'The planning system should contribute to and enhance the natural and local environment by:.... 'Minimising impacts on biodiversity'... and 'preventing both new and existing development by contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability'.

Paragraph number 122 also states that local planning authorities should assume that pollution control regimes will operate effectively. During the operational phase of the facility, Natural Resources Wales permitting and controls will apply.

Main Potential Sources of Pollution

The main potential pollutants during construction include dust, silt and drainage run-off.

- 1) Should any significant areas of ponding water develop, straw bales or alternatively sand bags will be placed around the boundary of the water so as to largely contain it and filter out any suspended solids. They will be placed in a continuous line in such a manner as to prevent water containing silts and sediments from discharging in an uncontrolled manner off site.
- 2) The straw bales or sand bags will be inspected and maintained in place as necessary throughout the construction period and will be replaced as necessary to ensure their effectiveness.
- 3) Care will be taken on site to minimise the steepness of any exposed bare ground or stockpiles which would be vulnerable to rainfall thereby reducing the risk of soil erosion and release of suspended sediments into standing surface water or the river. If significant stockpiles of material are created, they will be seeded to stabilise the soils.
- 4) Should the ground become dry and dusty, dust suppressant measures will be employed. Dust will be controlled by periodic bowsering of the site with clean water as necessary with the use of a tractor and bowser.
- 5) Chemicals including fuel and oil will be stored on site in a location with an impervious base within a bund and will be secured. The bund will be of adequate capacity to contain any spillages or leaks. Leaking drums or tanks will be prohibited from site and if any should be detected they will be removed immediately in accordance with a safe procedure. Please note there are no requirements for any fuels or oils on site at any time.
- 6) Valves to any tanks will be protected from vandalism and kept secure to prevent unauthorised access. They will be kept turned off and kept in a locked state when not in use and.
- 7) There is no requirement for onsite refuelling but if it is necessary, refuelling of plant will be undertaken in a designated area away from sensitive habitats and will be supervised and not left unattended. Spill kits will be available on site. Hoses and valves will be maintained in a safe condition. Diesel pumps will be placed on drip trays to ensure that minor leaks and spillages are controlled. Any such accumulated liquids would be removed and appropriately disposed of.
- 8) In the event of a significant spillage or an emergency, the spill kit will be used and the area temporarily banded immediately to avoid uncontrolled discharge. Any spilt substance would be contained by covering with absorbent materials such as soil or sand or a boom. Natural Resources Wales would be

contacted in the case of such an Emergency and the appropriate advice sought and required procedures as instructed would be followed.

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