



PROPOSED DEMOLITION, CONVERSION AND SITE REDEVELOPMENT

Report Title: Great Crested Newt - Presence/Absence Survey Results

Address: Gamford Farm, Gamford Lane, Rossett, LL12 0EW

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Document Title	Great Crested Newt - Presence/Absence Survey Results
Prepared for	Appleton Deeley Planning and Landscape
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Executive Summary

As part of a proposed planning application concerning Gamford House, Wrexham and a number of derelict agricultural and workshop outbuildings, Tyrer Ecological Consultants Ltd were commissioned by Appleton Deeley Planning and Landscape during April 2019 to carry out presence/absence surveys of two ponds in relation to Great Crested Newt (*Triturus cristatus*) (GCN); the presence/absence surveys included a population size class assessment and were undertaken adhering to recommendations provided within the accompanying earlier Preliminary Ecological Appraisal (PEA) report issued by Tyrer Ecological Consultants Ltd in December 2018, which had identified that suitable terrestrial habitat exists at Gamford Farm within 'core' proximity of two potential breeding ponds. The PEA is attached (see Appendix II).

Four surveys were undertaken per pond within the recommended period of mid-March to mid-June, with three of the four visits undertaken during the peak activity period of mid-April to mid-May (see Table 1). Where GCN are recorded then an additional two visits (to total six) are typically required under current guidance in order to estimate the population size-class present - however it was agreed with Mr. Matt Ellis (Senior Species Officer - Natural Resources Wales) (*Pers. comm* - 01/05/2019) that four visits per pond would satisfy the data gathering requirements necessary for GCN at Gamford Farm.

Great Crested Newt: From the presence/absence survey results it can be concluded that GCN presence was confirmed in Pond 1 and Pond 2. Furthermore, eggs were found in both ponds confirming GCN use both Pond 1 and Pond 2 for breeding purposes. The data collated over four surveys provided a peak count of '25', indicating the population size class on site/for the localised area to be 'medium' in category.

The proposed redevelopment of Gamford Farm should consider impacts to the terrestrial habitat of Great Crested Newt as of material importance, should provide appropriate mitigation and should exercise extreme caution in relation to this species during the proposed work schedule. In the absence of mitigation the permanent loss of mixed value terrestrial habitat on site, overwintering areas and other risks, as outlined, would adversely impact on what is currently considered to be a 'medium' population of breeding GCN. The impacts on such a population is unlikely to be significant to the overall favourable conservation status of the species in North Wales, however, mitigating measures have been prescribed in section 7.0 to provide ¹like for like habitat to compensate for the habitat being lost to proposed development, ²achieve a biodiversity net-gain as a key achievement of the scheme and ³maintain the favourable distribution of the species in North Wales.

With provision of mitigation and other site enhancement (as outlined in the report and other scheme related ecological reports) it is anticipated that the GCN population would remain constant. In terms of the proposed long term mitigation and enhancement outlined within it is considered that the quality of the proposed mitigation would allow for increased abundance, allowing newts to use the two ponds and surrounding areas long-term, as it would provide a sustainable and manageable environment for them despite the proposals, thus the conservation status of this species in the wider area could be improved.

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Appendix II - Preliminary Ecological Appraisal - Tyrer Ecological Consultants Ltd (Dec 2018)

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1.0 Introduction & Reasons for Survey

- 1.1 As part of a proposed planning application concerning Gamford House, Wrexham and a number of derelict agricultural and workshop outbuildings, Tyrer Ecological Consultants Ltd were commissioned by Appleton Deeley Planning and Landscape during April 2019 to carry out presence/absence surveys of two ponds in relation to Great Crested Newt (*Triturus cristatus*) (GCN); the presence/absence surveys included a population size class assessment and were undertaken adhering to recommendations provided within the accompanying earlier Preliminary Ecological Appraisal (PEA) report issued by Tyrer Ecological Consultants Ltd in December 2018, which had identified that suitable terrestrial habitat exists at Gamford Farm within 'core' proximity of two potential breeding ponds. The PEA is attached (see Appendix II).
- 1.2 Updated site proposals involve the creation of 8 detached dwellings to replace the derelict farm house and outbuildings, and will include new landscaping and access (see Figures 1-2).

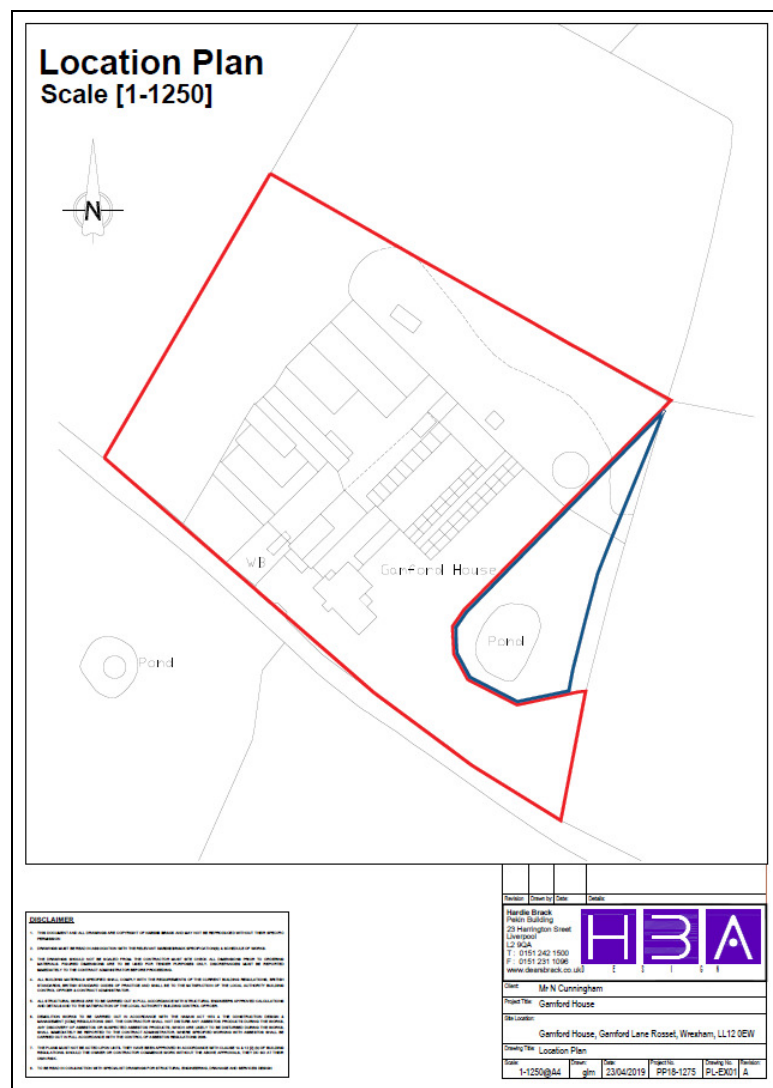


Figure 1 - Updated existing site plan

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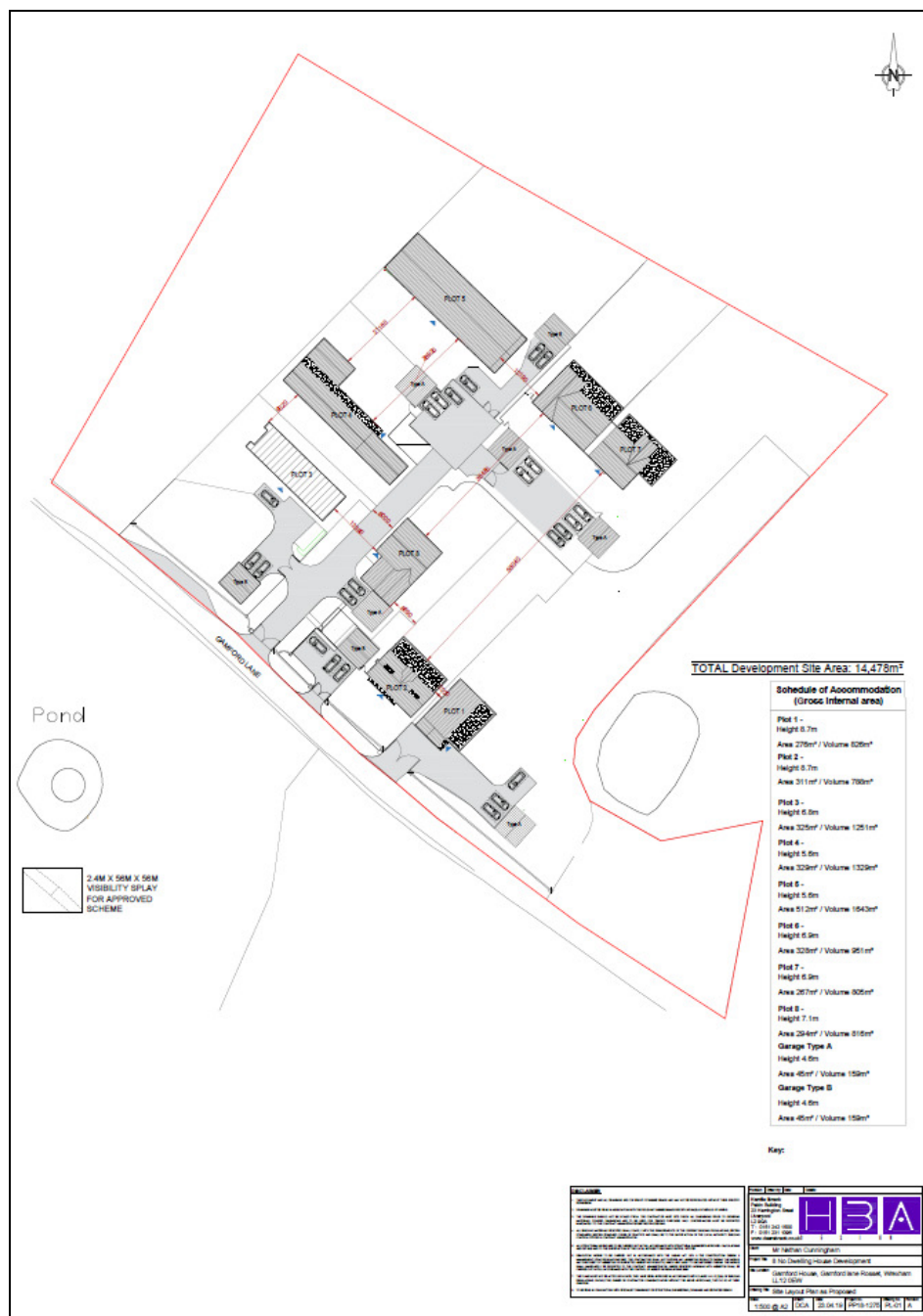


Figure 2 - Updated proposed site plan

- 1.3 Gamford Farm currently consists of buildings (0.2ha) and hardstanding (0.55ha) with areas of dense/scattered scrub (0.5ha), tall/ruderal herb (0.5ha), semi-improved grassland (0.3ha), species poor intact hedgerow (0.05ha) and a small area of conifer wood (0.04ha).
- 1.4 Please note the existing site boundary has been adjusted since the PEA (December 2018) to include an area of improved grassland used for silage purposes to the west, this report will acknowledge the 'updated' site boundary as part of its design and recommendations.

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Aims

- 1.5 The aim of the GCN presence/absence surveys were to:
- Determine the presence or likely absence of GCN,
 - Determine the population size class of GCN if present,
 - Provide an appraisal of the implications created by the potential/confirmed presence of GCN at the site, whichever applicable,
 - Establish if any potential effects on GCN caused by the development are permissible,
 - Ensure that the required level of survey work is undertaken to apply for a European protected species mitigation licence (EPSML) should one be necessary,
 - Provide recommendations in relation to mitigation strategies that may be necessary to prevent detrimental effects from the proposals to the GCN population
- 1.6 In accordance with paragraph 175 of the National Planning Policy Framework (NPPF), *Biodiversity Net Gain: Good practice principles for development* (CIEEM *et al*, 2019), measures have been recommended proportionate to anticipated impacts to ensure that the proposed development results in a biodiversity net gain as part of the scheme.

2.0 Great Crested Newt (GCN) Legislation & Planning Policy

- 2.1 Great Crested Newts (*Triturus cristatus*) (GCN) have declined within the UK over recent years due to destruction and fragmentation of breeding ponds and terrestrial habitat. They spend a high percentage of their adult life in a terrestrial habitat and use hibernacula such as log piles, tree roots and itemised rubble for hibernation and refuge. Within Wrexham, GCN's are found where favourable habitat coincides with connectivity to breeding pools.
- 2.2 GCN's are protected in all life stages by the Conservation of Habitats & Species Regulations 2017 and Wildlife and Countryside Act (1981) (as amended).

The legislation makes it a punishable offence too:

- Deliberately, intentionally or recklessly kill, injure or take a GCN,
- Deliberately, intentionally or recklessly take or destroy GCN eggs,
- Possess or control any live or dead specimen, or anything derived from a GCN,
- Deliberately, intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a GCN,
- Deliberately, intentionally or recklessly disturb a GCN while it is occupying a structure or place which it uses for that purpose

GCN are also protected by the Protection of Animals Act (1911), which prohibits any acts of cruelty or mistreatment.

- 2.3 Chapter 5, point 2.8 of Planning Policy Wales (PPW) stipulates the following:

“The planning system has an important part to play in meeting biodiversity objectives by promoting approaches to development which create new opportunities to enhance biodiversity, prevent biodiversity losses, or compensate for losses where damage is unavoidable. Local planning authorities must address biodiversity issues, in so far as they relate to land planning, in both development plans and development management decisions. Local planning authorities should consider how they might accommodate a response to climate change as part of their overall approach towards meeting biodiversity objectives. Ways in which the adaptation needs of biodiversity could be considered include identifying the scope for minimising or reversing the fragmentation of habitats and

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improving habitat connectivity through the promotion of wildlife corridors. Local planning authorities should ensure that development minimises impact within areas identified as important for the ability of species to adapt and/or to move to more suitable habitats."

- 2.4 The National Planning Policy Framework (NPPF) has replaced the Planning Policy Guidelines (PPG's). In relation to wildlife, PPG 9 was one of the documents to which Planning Authorities referred to, particularly where a specially protected species is or may be present and will be affected by a development for which a Planning application seeks consent. The aims of the NPPF, in relation to species and habitats, are that it places a clear responsibility on Local Planning Authorities to conserve and enhance biodiversity and to encourage on the consideration that should be given to Protected Species where they may be affected by development.

When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying principle 175(a), as extracted from the NPPF.

"If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused".

- 2.5 Guidance for Local Authorities: Extract from Office of the Deputy Prime Minister: Circular 06/2005.

"It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision."

3.0 Survey Methodology

Desk Study

- 3.1 During the Preliminary Ecological Appraisal (see Appendix II) a data search to include all protected species and designated sites within a 2.0km radius of Gamford Farm was requested from the Local Biological Records Centre serving Wrexham (Cofnod). The data search provided supplementary and otherwise unobtainable information concerning protected species and their local distributions including the recorded presence of GCN. A summary of the records provided in relation to GCN is extracted below.

"6 records of GCN were highlighted by the Cofnod data search, the nearest and most notable of which is located at 593 metres to the south from 2015, referring to a small colony found within a garden pond, separable from the site by 1 significant barrier - road."

- 3.2 Information was also gathered using Multi Agency Geographic Information for the Countryside (MAGIC – provided by Defra) and Google Earth (© 2018/19); such information aids in understanding how species might interact with the site and/or its surroundings.
- 3.3 During the desktop study stage of the PEA it was acknowledged that Gamford Farm was subject to previous ecological survey work in 2015 by Arbtech and The Environment Partnership (TEP) viewable on the Wrexham Planning Portal; the findings of the surveys were acknowledged as part of the reports compilation, an extract is given below:

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“TEP undertook eDNA on two ponds (Pond 1 and Pond 2) after their 1.0km data search revealed GCN records exist within the search area and after categorising two ponds “excellent” and “good” during HSI scoring. The results of the eDNA testing implemented by TEP indicated that GCN were absent from the ponds and no further recommendations were given in their report.”

- 3.4 It has also come to the attention of Tyrer Ecological Consultants Ltd via the Wrexham Planning Portal that ‘Pond 2’ located off site was subject to a eDNA presence/absence survey in 2016 in relation to a separate planning application on nearby land (P/2018/0560 - refused) carried out by Kingdom Ecology (November, 2016). Within the ecological report associated with the given planning application, Kingdom Ecology concluded with the following in relation to GCN at Pond 2:

“Water samples from the pond were collected and were analysed for great crested newt eDNA. The laboratory at Surescreen Scientifics returned a negative result for great crested newt eDNA. Consequently it is considered highly unlikely that great crested newts are present at the proposed development site.”

GCN Habitat Surveys

- 3.5 A map and field search was undertaken in relation to the presence of ponds or waterways that may support GCN (see Figure 3). Two ponds (Pond 1 and Pond 2) are found within a 250 metre search buffer and two additional pond features within 500metres.
- 3.6 In proportion to the proposals it was decided that the nature and scale of the works are unlikely to impact on any individual GCN's, ponds or associative terrestrial habitat located beyond the 250metre search buffer zone, thus only Pond 1 and Pond 2 would require habitat suitability indexing and surveys.

NB: *English Nature's (now Natural England) Great Crested Newt Mitigation Guidelines (2001) states ponds within 500m of a proposed development site should be considered for their respective potential to support GCN, however, in some instances this distance may be reduced to 250m due to the presence of physical barriers and obstructions, or based on the likely magnitude of impacts arising from the proposed development.*

- 3.7 Terrestrial habitat within Gamford Farm comprises mixed value to GCN and other amphibians inclusive of rough unmanaged grassland, hedgerows, tall ruderal, scrub, dilapidated structures, trenches, piled refuge/aggregates and potential hibernacula areas in core proximity (<50metres) from at least one of the two ponds. No significant barriers prevent commuting between the two ponds, though Gamford Road which is adjacent to site, poses a low risk of road kill being a reasonably busy single carriageway.

NB: *Research presented by Natural England provides evidence that GCN are most likely to use terrestrial habitat within 100metres of their breeding ponds, whilst the Great Crested Newt Method Statement for EPSML (Natural England) describes terrestrial habitat zones - 50metres within any GCN pond is the ‘Core’ habitat zone, the area most likely to support newts in a lifetime; the area between 51-250m is the ‘Intermediate’ zone and 250m+ is the ‘Distant’ zone; impacts to these zones, from individual ponds, are considered by the ecologist, both permanent and temporary impacts are taken into account.*

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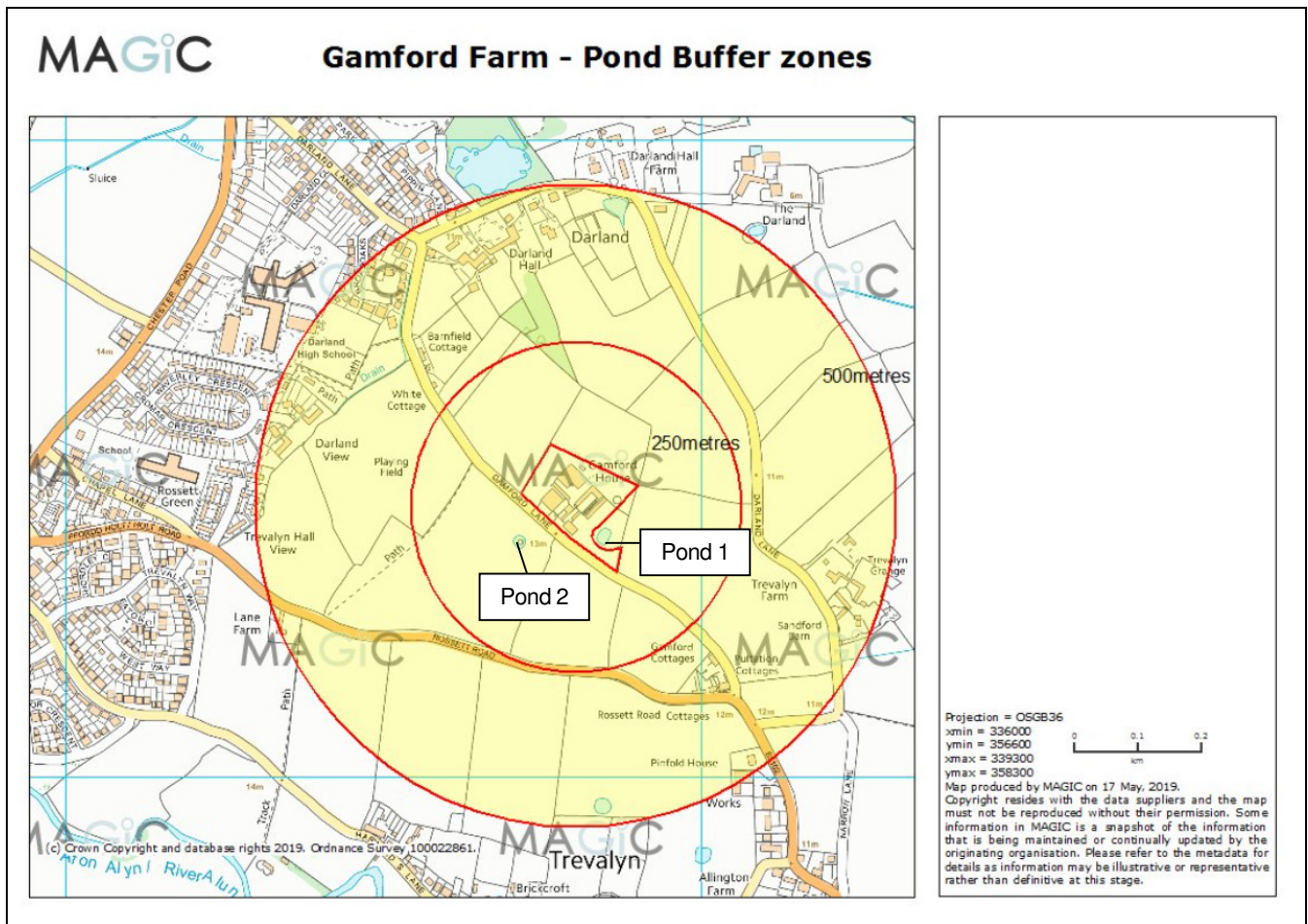


Figure 3 - Pond search - adapted from Magic Maps 2019

- 3.8 Pond assessments were completed on 2 open water bodies in total (Pond 1 and Pond 2), their locations are shown in Figure 3 above and Figure 4 below, and they are individually described in Appendix I - GCN Habitat Suitability Index (GCN HSI) extracted directly from the PEA.
- 3.9 Pond 1 is located just 5.0 metres east of the updated site boundary; Pond 2 is located 45.0 metres to the south-west (Figure 4).
- 3.10 Pond assessments were based on English Nature's Great Crested Newt Mitigation Guidelines (2001), Froglife's Great Crested Newt Conservation Handbook (2003), Gov.UK (2015), and the Herpetological Conservation Trust's National Amphibian and Reptile Recording Scheme (NARRS) (2008).



Figure 4 - Pond locations in proximity to site as described, source OS Maps 2019

Habitat Suitability Index (HSI)

- 3.11 Both Pond 1 and Pond 2 were inspected and scored using the GCN Habitat Suitability Index (GCN HSI) assessment. Developed by *Oldham et al* (2000); *Herpetological Conservation Trust* (2008), the GCN HSI is a quantitative measure of habitat quality evaluating suitability of aquatic habitat for Great Crested Newts. It should be stated that HSI scoring is not a substitute for undertaking newt surveys; it indicates but cannot confirm presence or absence of newts. Very low HSI scores may be used along with scheme details to infer a minimal chance of committing an offence in low impact situations. This is on a risk assessment basis and developers should be aware of the potential hazards of this approach.

The results of the GCN HSI indicated that Pond 1 is of 'Excellent' suitability, Pond 2 is of 'Average' suitability. The full GCN Habitat Suitability Index breakdown is provided in Appendix I.

Presence / Absence Surveys

- 3.12 The surveys were carried out by two highly experienced suitably qualified ecologists, Mr. T. Knight (Natural Resources Wales licence no: 79950: OTH:SA:2018) and Mr. M. Ellson (Natural Resources Wales licence no. S085131/1).
- 3.13 Four surveys were undertaken per pond within the recommended period of mid-March to mid-June, with three of the four visits undertaken during the peak activity period of mid-April to mid-May (see Table 1). Where GCN are recorded then an additional two visits (to total six) are typically required under current guidance in order to estimate the population size-class present - however it was agreed with Mr. Matt Ellis (Senior Species Officer - Natural Resources Wales) (*Pers. comm* - 01/05/2019) that four visits per pond would satisfy the data gathering requirements necessary for GCN at Gamford Farm.

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Where GCN are confirmed as present during the surveys a European Protected Species Mitigation Licence (EPSML) application is typically required after planning permission has been granted to allow the development to legally proceed.

- 3.14 The survey methods followed those outlined by English Nature's publication GCN Mitigation Guidelines (2001) and the guidance provided by Gov.UK - Protected species licences (2015). Field techniques for surveying Great Crested Newt primarily involve using three from the following six methods:

- netting,
- egg search,
- terrestrial refuge search,
- torching,
- aquatic funnel (bottle) trapping

The methods chosen by the ecologists were aquatic funnel (bottle) trapping, torching and egg search, an explanation of the methods implemented is provided below.

Bottle Trapping: 25 Plastic bottle traps were set around the margins of both ponds approximately every 3.0 metres - 4.0 metres where access allowed, shortly before dusk. The traps were left in-situ overnight and checked & removed the following morning between 8.00am - 9.00am. All four surveys were undertaken when the predicted air temperature exceeded 5°C, when GCN are generally considered most active.

Torchlight Survey: This technique involves a visual search for individual newts inhabiting each water body. High-powered torches were used to search the waterbodies after nightfall, following a period of 20mins when the water (post bottle trap setup) has settled. Pond perimeters were walked taking care to count all animals seen. To maximise the reliability of this technique, all torch surveys were conducted on evenings where the air temperature exceeded 5°C, when newts are generally considered being most active.

Egg Search: GCN eggs were searched for amongst any submerged, floating and other aquatic vegetation. When laying their eggs, female GCN fold leaves of aquatic/semi-aquatic plants around the egg, although dead leaves and a variety of artificial materials are also known to be used. This behaviour is exploited by the surveyor to demonstrate that GCN are breeding in a particular waterbody, however, egg numbers cannot be used to estimate population size due to predation and high mortality rates, therefore, in order to limit disturbance and avoid any unnecessary impacts, this method is ceased as soon as any eggs have been positively identified in aquatic habitat.

Table 1 - Presence/Absence survey dates

Survey Number	Survey Dates, Period of Date		Peak Activity Period	
	PM	AM	Yes	No
1	30/04/2019	01/05/2019	Y	
2	08/05/2019	09/05/2019	Y	
3	13/05/2019	14/05/2019	Y	
4	21/05/2019	22/05/2019		N

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4.0 Constraints

- 4.1 The water in Pond 2 was generally quite turbid (turbidity score of 3 (Surveys 1-3) or 4 (Survey 4) based on the current convention recommended by Natural England). The water within approximately 0.5 to 1.0 metre from the margin was clear, thereafter the turbidity significantly reduced visibility during the torch surveys. The water within Pond 1 was clear to within at least 2.0-3.0 metres from the margin.
- 4.2 Approximately 25% of the margin of Pond 1 was not accessible due to the presence of Willow (*Salix* spp.) scrub (northern margin). This scrub prevented the deployment of bottle-traps along this stretch as well as the effective use of torches for survey.
- 4.3 Approximately 5-10% of the margin of Pond 2 was not accessible due to the presence of Willow (*Salix* spp.) scrub (eastern margin). This scrub prevented the deployment of bottle-traps but not the effective use of torches.
- 4.4 During Surveys 3 and 4, debris from Hawthorn (*Crataegus monogyna*) flowers and Willow (*Salix* spp.) catkins was frequent on the surface of both ponds. In addition, a filamentous algae was abundant at the margins of Pond 2; the described factors reduced the effectiveness of the torchlight method.
- 4.5 All surveys were completed within suitable weather parameters. While the constraints noted above may have reduced the number of animals recorded on each occasion it is considered that they would not significantly prevent the gathering of data on which to base sound conclusions and recommendations.

5.0 Presence/Absence Survey Results

- 5.1 The table below (Table 2) provides the dates and climatic conditions experienced during the dusk survey period of all presence/absence surveys. The conditions the following morning are not included, as the sole purpose of the morning visits was to release the animals from the bottle traps deployed the previous night, though morning visits can on occasion include egg searches.

Table 2 - Weather conditions during the dusk Presence/Absence surveys

Survey Number	Survey Date	Temperature at dusk	Wind (Beaufort Scale)	General
1	30/04/19	13.4°C	0-1	Dry, 100% cloud.
2	08/05/19	8.8 °C	2-3	Dry, 100% grey cloud, very light drizzle towards end of torch survey.
3	13/05/19	11.9°C	0-1	Dry, 0% cloud
4	21/05/19	10.4°C	0	Dry, 0% cloud

- 5.2 Table 3 overleaf summaries the results of the presence/absence surveys, whilst Table 4 provides a more comprehensive overview of the data collated in order to inform the population size class.

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In Table 4, GCN results are presented as either number of adults with a ♂ for a male or ♀ for a female, 'juv' for juveniles and a yes / no for egg presence. Only the methods used are listed.

Table 3 - GCN Presence/Absence surveys - summary

Pond Number	Maximum Count			GCN egg recorded	GCN Population Class ¹
	Great Crested Newt (GCN)	Smooth Newt (SN)	Palmate Newt (PN) (& Smooth/Palmate Female ²)		
1	25	3	0	Yes	Medium
2	2	1	0	Yes	Small

Table 4 - GCN Presence/Absence survey results

Pond Number	Visit	Date	Survey Type	Amphibians												Other
				GCN				SN		PN		SN/PN				
				♂	♀	j	egg	♂	♀	♂	♀	♀	j	egg		
1	1	30/04/19	Torch	1	2	-	Y	-	-	-	-	-	-	-	CF tadpoles.	
			Bottle-traps (22 ³)	13	4	-	-	2	1	-	-	-	-	-		
	2	08/05/19	Torch	2	4	-	-	-	-	-	-	-	-	-		
			Bottle-traps (25)	-	5 ⁴	-	-	-	-	-	-	-	-	-		
	3	13/05/19	Torch	-	1	-	-	-	1	-	-	-	-	-		
			Bottle-traps (25)	16 ⁵	9	-	-	1	-	-	-	-	-	-	CF tadpole.	
	4	21/05/19	Torch	1	1	-	-	-	1	-	-	-	-	-	CF adult.	
			Bottle-traps (25)	2	3	-	-	2	-	-	-	-	-	-		
2	1	30/04/19	Torch	1	-	-	Y	-	-	-	-	-	-	-	CF adult (terrestrial), CF tadpoles.	
			Bottle-traps (25)	-	-	-	-	1	-	-	-	-	-	-	CF tadpoles.	
	2	08/05/19	Torch	-	-	-	-	-	-	-	-	-	-	-		
			Bottle-traps (25)	-	-	1	-	-	-	-	-	-	-	-	CF tadpole.	
	3	13/05/19	Torch	-	-	-	-	-	-	-	-	-	-	-	CF adult (terrestrial).	
			Bottle-traps (25)	-	-	-	-	1	-	-	-	-	-	-	CF tadpole.	
	4	21/05/19	Torch	-	-	-	-	-	-	-	-	-	-	-		
			Bottle-traps (25)	1	1	-	-	-	-	-	-	-	-	-		

¹ In accordance with English Nature (2001).

² Total may include some female Smooth Newts.

³ Indicates number of bottle-traps deployed.

⁴ One sub-adult.

⁵ Two sub-adults.

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Key to Table 4

♂	Male	j	Juvenile	Y	Yes
♀	Female	CF	Common Frog	N	No

6.0 Conclusions, Impacts & Recommendations

- 6.1 From the presence/absence survey results it can be concluded that GCN presence was confirmed in Pond 1 and Pond 2. Furthermore, eggs were found in both ponds confirming GCN use both Pond 1 and Pond 2 for breeding purposes.
- 6.2 The data collated over four surveys provided a peak count of '25', indicating the population size class on site/for the localised area to be 'medium' in category.
- 6.3 The proposed redevelopment of Gamford Farm should consider impacts to the terrestrial habitat of Great Crested Newt as of material importance, should provide appropriate mitigation and should exercise extreme caution in relation to this species during the proposed work schedule.

Impact Assessment

- 6.4 The proposals include the demolition of existing buildings on site with conversion of others. Proposals will involve redevelopment of the site including removal of terrestrial newt habitat, new groundworks at/around the buildings, infilling/opening of trenches, modified landscaping and alterations to access from Gamford Road.

In the absence of reasonable avoidance measures and/or mitigation the scheme would result in the following adverse effects on GCN:

- Permanent loss of mixed quality terrestrial habitat*, particularly for overwintering/shelter purposes within 50-100metres of two confirmed breeding pond(s)
- Temporary loss of other low quality terrestrial habitat
- Capture of newts in excavations etc,
- Obstructing dispersal of newts
- Killing or injuring newts (being crushed by machinery/equipment etc)

*See Figure 5 for a visual interpretation of the interpreted mixed terrestrial habitat quality coverage at Gamford Farm.

- 6.5 Proposed reasonable avoidance measures are given in Table 5 overleaf.

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Table 5 - Suggestions for Reasonable Avoidance Measures for works potentially affecting GCN

Project Element	Suggestions for avoidance measures
Location & Layout	(a) Locate the site as far as possible from potential breeding ponds and high quality terrestrial habitat (b) Locate in areas subject to high pre-existing fragmentation (c) Locate on hard, compacted ground with few fissures (d) Design layout so that any hard landscaping is as far as possible from ponds, with retained habitat and soft landscaping toward ponds
Timing & duration	(a) Restricting works to the winter period (when newts are rarely active above ground) is sensible if the project would not harm hibernation habitat. Projects with temporary habitat disruption and reinstatement, such as some pipelines, could potentially be carried out without any licensable activity in this way (b) Keep duration of groundworks as short as possible (c) Undertake during the day works that might only affect newts above ground
Construction methods and special precautions	(a) Backfill trenches and other excavations before nightfall, or leave a ramp to allow newts to easily exit (b) Raise stored materials (that might act as temporary resting places) off the ground, e.g. on pallets (c) For pipelines, use directional drilling to cross areas of core habitat and dispersal routes (d) Avoid installing structures that act as barriers close to ponds, or include gaps at ground level where walls or fences are unavoidable

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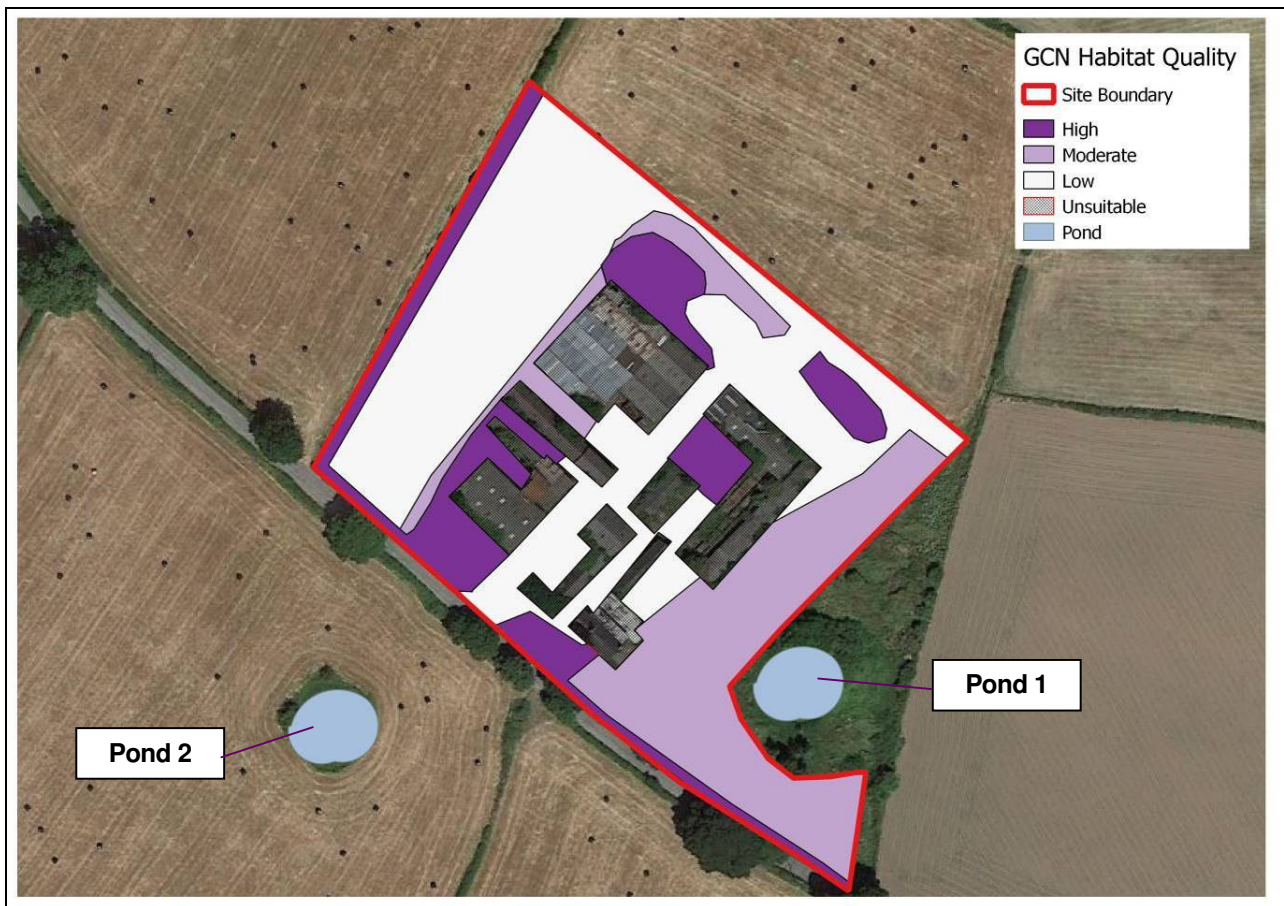


Figure 5 - GCN terrestrial habitat quality as interpreted at Gamford Farm

- 6.6 The proposed redevelopment of the site is a key objective of the applicant, and given the current proposals/requirements not all of the avoidance measures suggested could be implemented to avoid the risk posed to GCN. In order to determine whether the proposed development will result in the contravention of legislation and therefore subsequently require a development licence from Natural Resources Wales the Natural England (NE) "Rapid Risk Assessment" tool has been applied against the proposed works (Table 6).

Table 6 - N.E Rapid Risk Assessment

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	>1 ha lost or damaged	0.9
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	Capture of newts in excavations etc	0.8
Maximum:		0.9
Rapid risk assessment result:	RED: OFFENCE HIGHLY LIKELY	

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NB: "Red: offence highly likely" indicates that the development activities are of such a type, scale and location that an offence is highly likely. In this case, you should attempt to re-design the development location, layout, timing, methods or duration in order to avoid impacts and re-run the risk assessment. If you cannot avoid the offences, then a licence should be applied for.

- 6.7 The proposals therefore contain a number of elements (see section 6.4) that cannot be legally carried out without first acquiring a European Protected Species Mitigation Licence (EPSML) from Natural Resources Wales.

The EPSML should be applied for after planning permission has been granted, to allow the development to legally proceed under licence in association with a suitably qualified and experienced ecologist. The EPSML application should demonstrate to Natural Resources Wales that the 3 derogation tests can be successfully met.

The 3 derogation tests - EPSML

- 6.8 The species protection provisions of the Habitats Directive, as implemented by the Conservation of Habitats and Species Regulations 2017, contain three "derogation tests" which must be applied by the LPA prior to granting planning permission, and again by Natural Resources Wales, when deciding whether to grant a licence to a person carrying out an activity which would harm a European Protected Species (such as GCN). For development activities this licence is normally obtained after planning permission has been obtained.
- 6.9 In determining whether or not to grant a licence Natural Resources Wales must apply the requirements of Regulation 53 of the Regulations and, in particular, the three tests set out in sub-paragraphs (2)(e), (9)(a) and (9)(b).

(1) - Regulation 53(2) (e) states: a licence can be granted for the purposes of "preserving public health or public safety or other imperative reasons of overriding public interest (IROPI) including those of a social or economic nature and beneficial consequences of primary importance for the environment".

(2) - Regulation 53(9) (a) states: the appropriate authority shall not grant a licence unless they are satisfied "that there is no satisfactory alternative".

(3) - Regulation 53(9) (b) states: the appropriate authority shall not grant a licence unless they are satisfied "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."

(1) - Regulation 53(2)(e), IROPI

The development proposals generate significant and mutually supportive economic, social and environmental benefits and gains which collectively constitute sustainable development in line with Planning Policy Wales 10 (PPW10) "Place-making". Place-making is a holistic approach to the planning and design of development and spaces, focused on positive outcomes. It draws upon an area's potential to create high quality development and public spaces that promote people's prosperity, health, happiness, and wellbeing in the widest sense.

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(2) - Regulation 53(9)(a), no satisfactory alternative

There are no acceptable or deliverable alternative site uses and in terms of viability the brownfield and dilapidated state of Gamford Farm outperforms other possible alternative housing sites and areas of green belt, including the approved conversion scheme. The proposals will achieve sustainable development in accordance with an emphasis on generating significant and mutually supportive economic, housing strategy and environmental benefits which collectively constitute sustainable development.

(3) - Regulation 53(9)(b), favourable conservation status

"A derogation of the Conservation of Habitats and Species Regulations 2017 (i.e. - an action permitted under an EPSML that would otherwise be unlawful) must not be 'detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range'" (European Commission 2007).

- 6.10 In the absence of mitigation the permanent loss of mixed value terrestrial habitat on site, overwintering areas and other risks including significant disturbance/risk of death, as outlined, would adversely impact on what is currently considered to be a 'medium' population of breeding GCN. The impacts on such a population is unlikely to be significant to the overall favourable conservation status of the species in North Wales, however, mitigating measures have been prescribed in section 7.0 to provide ¹ like for like habitat to compensate for the habitat being lost to proposed development, ² achieve a biodiversity net-gain as a key achievement of the scheme and ³ maintain the favourable distribution of the species in North Wales.
- 6.11 With provision of mitigation and other site enhancement (as outlined in the following sections and associated reports) it is anticipated that the GCN population (currently estimated to be 'medium') would remain constant. In terms of the proposed long term mitigation and enhancement outlined below, it is considered that the quality of the proposed mitigation would allow for increased abundance of GCN allowing newts to use the two ponds and surrounding areas long-term, as it would provide a sustainable and manageable environment for them despite the proposals, thus the conservation status of this species in the wider area could be improved.

7.0 Indicative Mitigation

- 7.1 *"The level of mitigation required depends crucially on (a) the size of impact, and (b) the importance of the population affected" (English Nature, 2001).*
- 7.2 Approximately 1.2ha of mixed quality terrestrial habitat is to be permanently lost, across an area within 100metres of two confirmed breeding ponds, which would result in an offence under wildlife legislation. Therefore, an application for EPSML is required to be obtained from Natural Resources Wales (NRW) prior to any works taking place at Gamford Farm. The EPSML should contain measures outlining how to avoid any harm to GCN, proportionate provision of alternative suitable habitats and the provision of additional suitable habitats, where possible, to enhance the local conditions and ensure the current GCN population is maintained.
- 7.3 Gamford Farm will require fencing off with temporary newt fencing (see Figure 6), which will allow removal of amphibians from the works area whilst preventing re-entry.

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- 7.4 In addition to fencing off the site and to ensure the site is free of GCN, drift fencing with pitfall traps and artificial refuges (where necessary) will be employed to allow GCN to be captured. All compartmentalised areas should also be subject to a hand search during any given pitfall inspection; any destructive hand search should be overseen by an ecologist and only carried out under licence outside of the winter months when GCN are hibernating/much less active.

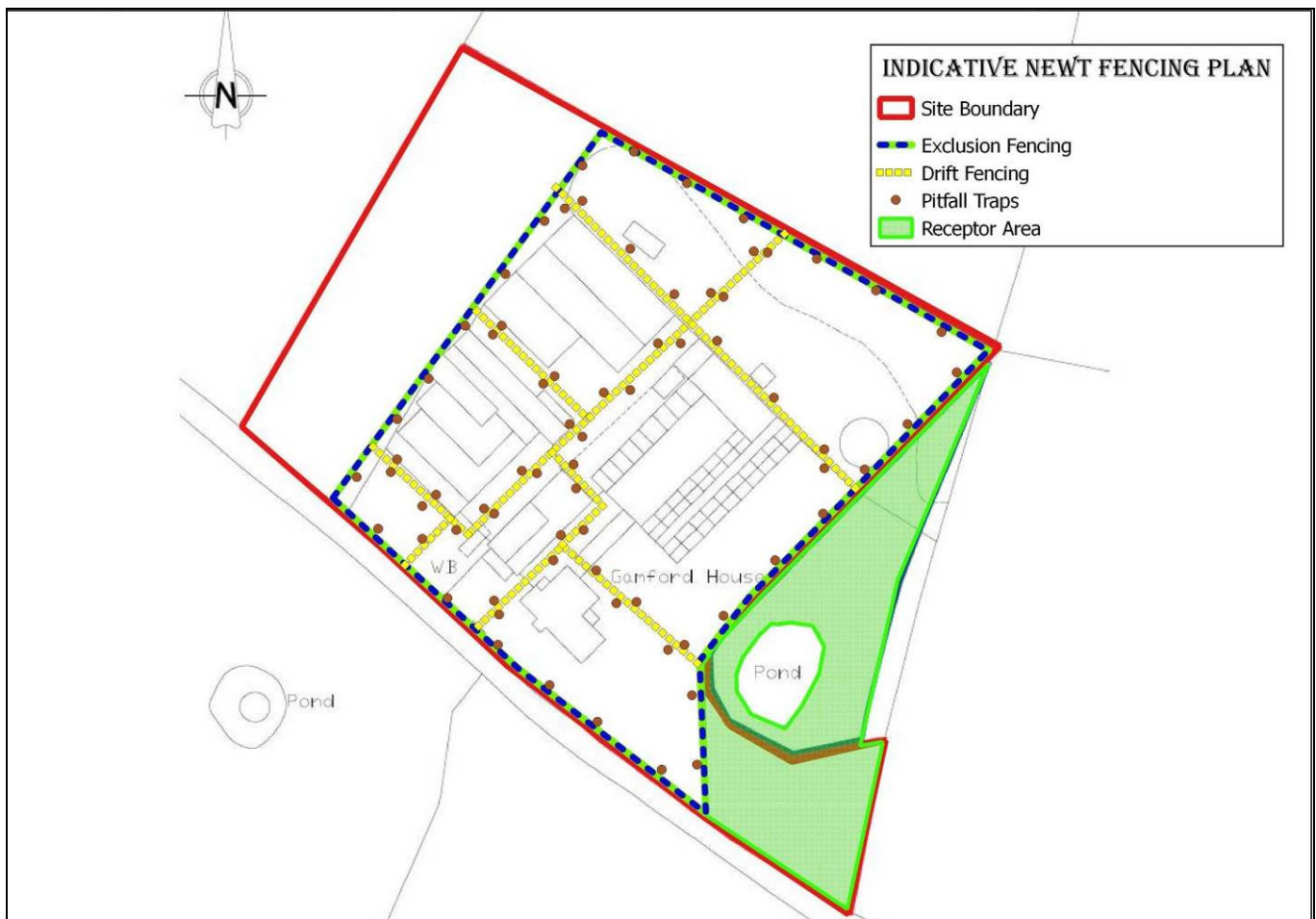


Figure 6 - Indicative newt fencing plan for Gamford Farm, adapted over updated existing site plans

- 7.5 Newt capture can be undertaken during any period of the year in Wales though the optimal period is typically between March-October, although this is weather dependent. Capture efficiency varies greatly according to timing and methods used. Typically the best time to capture newts is during the breeding migration i.e. when they are most likely to be moving around between terrestrial and aquatic habitats i.e. March to June.
- 7.6 Sixty days is the minimum capture period for a medium population of GCN under accepted guidance, however trapping effort should be/is often discussed with Natural Resources Wales beforehand for development schemes in North Wales, and this approach is recommended to the licensee by Tyrer Ecological Consultants Ltd in respect of Gamford Farm.

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- 7.7 All captured newts require translocating to a suitable receptor site - this land would need to be beyond the development area but within a suitable distance (ideally within 250m) and of similar habitat value to the areas being lost.
- 7.8 The proposed receptor area is the region around Pond 1 in the east of the site - whilst availability also exists in the west of the site as according to updated site plans (see Figure 6 above and Figure 7 below). All existing grassland around Gamford Farm in the east and west, alongside bordering hedgerows, are recommended to be retained and enhanced, allowing relocated newts sufficient habitats to forage, shelter and disperse effectively long term. In addition, provision of new refugia/hibernacula should be instated in the receptor area(s) to offer GCN and other amphibians a means of perma-shelter and overwintering provision in an area within 100m from two confirmed breeding ponds. For typical hibernacula spec see Figure 8 - other novel designs can be used, though any built newt refuge should retain minimum dimensions/size of 2.0 x 2.0 x 2.0+ metres (length x width x height).

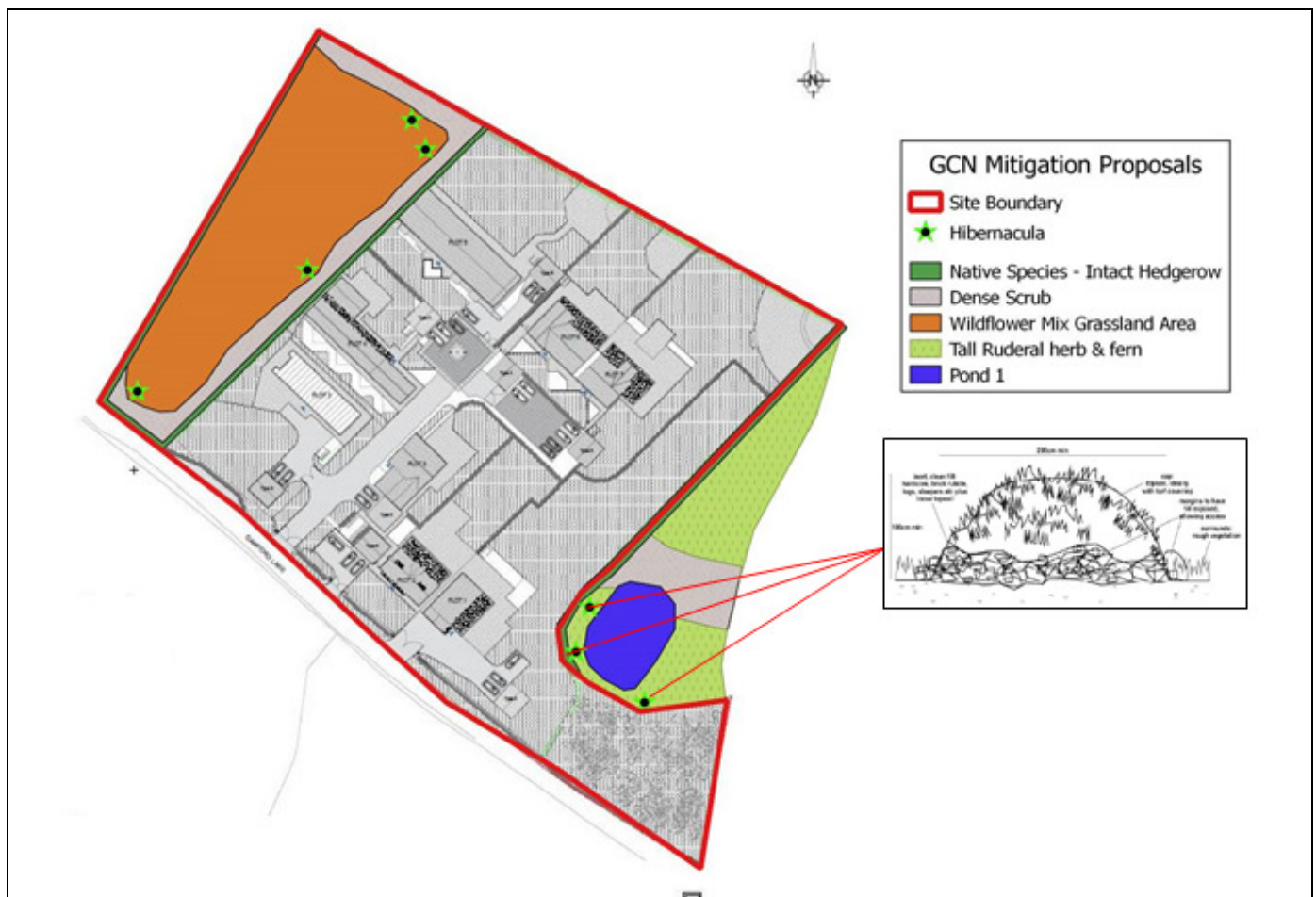


Figure 7 - Proposed mitigation areas at Gamford Farm

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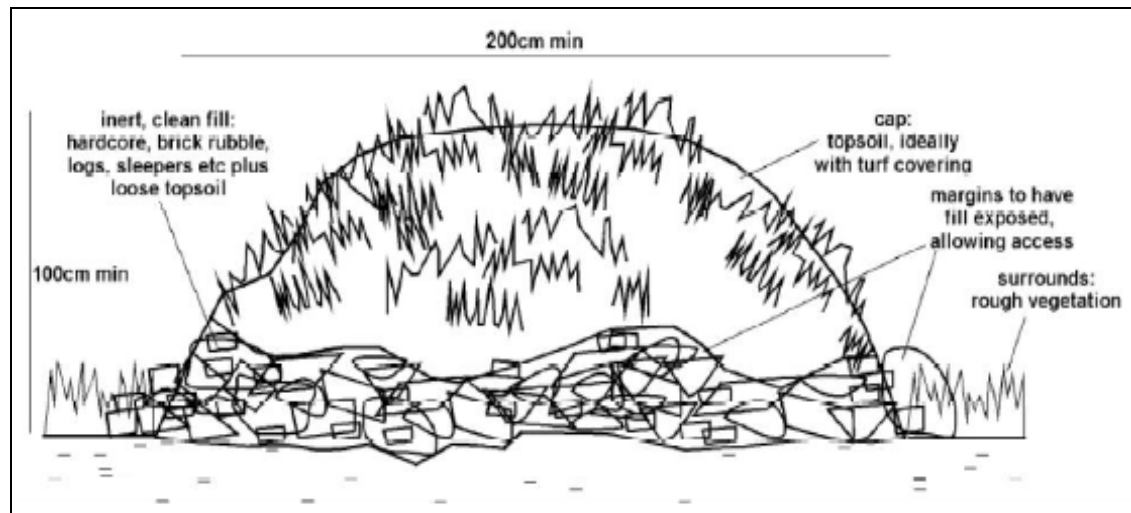


Figure 8 - Hibernacula design spec

- 7.9 Once the proposed Gamford Farm development site has been ‘trapped out’ and all captured GCN translocated, any remaining suitable refuge(s) on site should be hand searched by a suitably qualified and experienced ecologist prior to any habitat destruction and clearance activities. Following site clearance the one-way exclusion newt perimeter fence should be maintained throughout the construction phase, to ensure GCN do not re-enter the development area. The quality and functional integrity of the fencing should be checked and ensured to satisfactory status by the ecologist, or named agents, throughout the duration of its installation.
- 7.10 All translocation works, hand searches and fence installation/removal should be undertaken under the supervision of the ecological clerk of works (ECoW), who should be on site to provide all necessary supervision, specialist guidance and ad-hoc advice regarding protected GCN and provide a ‘toolbox talk’ to contractors before any works begin.
- 7.11 It is recommended the ecologist maintains a signed schedule document in agreement with the applicant in order to provide an audit trail throughout the proposed scheme.
- 7.12 Timing restrictions will apply to the removal of most structural and all vegetative features such as scattered trees, dense scrub and hedgerow (if they are to be removed). Vegetation clearance should be undertaken during the warmer months (May – September) under the supervision of the ECoW, although care will also need to be taken to avoid **breeding birds** typically between the months of March and August. The rationale for this is that GCN hibernate over winter, and hibernation sites should not be disturbed or sheltering places (e.g. rock piles, logs, piled metals and vegetation) dismantled during the coldest months. During this time great crested newts enter a period of much reduced activity, occasionally torpor, and are far more vulnerable to killing and injury. The summer disturbance of a GCN resting place is less likely to result in mortality.
- 7.13 Any other animals encountered such as frogs, toads or incidental reptiles should be reported to the named ecologist, treated with care and should be relocated from the development site to like-for-like habitat. Any questions or queries throughout the work schedule should always be checked and discussed with the named ecologist.

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Drainage

- 7.14 New road drainage proposals should incorporate suitable measures to ensure the risks of newts falling into gully pots (roadside drains) is minimised. This should include using permeable surfaces and/or soakaways rather than gully pots, where possible, or providing a dropped kerb or inset kerb stone immediately adjacent to any gully pots. A distance of ~100mm between the kerb and any gully pots is required, permitting newts to effectively navigate the kerbstones safely (Figure 9).

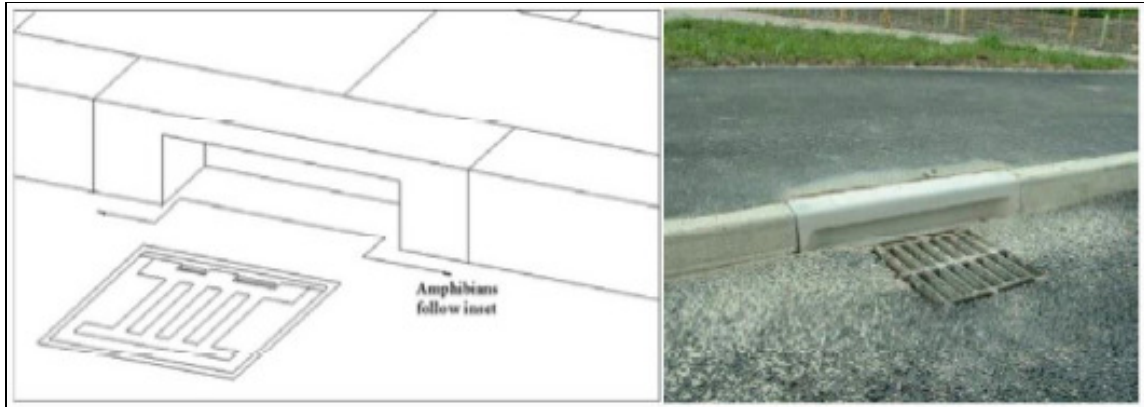


Figure 9 - Suggested kerb/gully pot use

Vehicular Access

- 7.15 Bespoke newt-proof vehicular access points should be applied wherever access is proposed on to the work site, to allow passage for site contractors, whilst limiting detrimental effects on newts. The 'I-beam' construction is proposed (Figure 10), though should be approved by the appointed named ecologist.

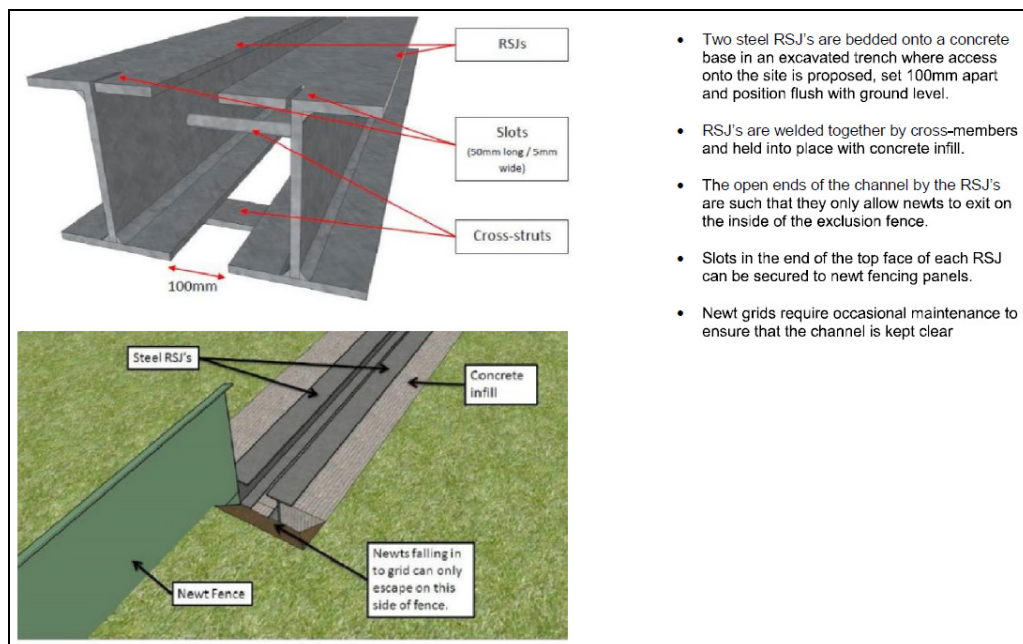


Figure 10 - Newt 'I-Beam' crossing specification

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Post-development

- 7.16 The licence and method statement will include requirements for monitoring the GCN population within the receptor area into the future. The level of monitoring required will be determined during the licensing process.
- 7.17 If works do not commence within two years from the date of this report issue (i.e. by June 2021), both Pond 1 and Pond 2 should be reassessed for their suitability to support GCN and, repeat population size class assessment surveys should be carried out.

Section 106 Agreements and other

- 7.18 Mitigation can be complex (and costly) in certain situations; GCN habitats are often multifaceted having developed over time and they should not be viewed as simple systems which are easily moved or recreated without difficulty. Migration patterns, site demographics, breeding and foraging may be disrupted through mitigation, particularly where translocation is involved. Newly created habitats are not always qualitatively as good as old ones, and there is an intrinsic value in established habitats that should not be under-rated. As such, effective compensation may require land purchase deals and complex planning and legal arrangements, such as section 106 agreements, restrictive covenants and adoption as publicly owned land.
- 7.19 There are a number of options for securing the finance for appropriate management and maintenance after development. A commuted sum (similar to that which is paid by developers to local authorities in order for them to adopt public open space, roads, footpaths, etc.) may be made available. The setting up of a trust fund, or agreements with local wildlife groups, may be an option. Local authorities may take on management if the receptor site is part of, or linked to a Public Open Space or area of particular/potential value. Whatever method for delivering management and maintenance, it should be ensured through a binding planning obligation.

8.0 Bibliography

- English Nature. (2001). *Great Crested Newt Mitigation Guidelines*, Peterborough.
- Froglife. (2003). *Great Crested Newt Conservation Handbook*, Froglife, Halesworth, Suffolk.
- Gent, T. & Gibson, S. (2003). *Herpetofauna Workers' Manual*. JNCC, Peterborough.
- Gov.UK. (2015). *Great crested newts: surveys and mitigation for development projects*. Available from: www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects. Accessed (21/05/2019).
- Herpetological Conservation Trust. (2008). *National Amphibian and Reptile Recording Scheme*.
- Oldham, R.S.; Keeble, J.; Swan, M.J.S. & Jeffcote M. (2001). *Evaluating the suitability of habitat for the great crested newt (Triturus cristatus)*. The Herpetological Journal 10 (4), 143-155.

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Appendix I: GCN Habitat Suitability Index (GCN HSI)

The following HSI is adapted from the PEA -
(Tyrer Ecological Consultants Ltd, December 2018)

Great Crested Newt (GCN) HSI scoring				
HSI Score			Pond suitability	
<0.50	0.50 - 0.59	0.60 - 0.69	0.70 - 0.79	>0.80
Poor	Below Average	Average	Good	Excellent

Pond ref	Pond 1	Pond 2
SI1 - Location	1	1
SI2 - Pond area	0.9	0.2
SI3 - Pond drying	0.9	0.5
SI4 - Water quality	0.67	0.33
SI4 - Shade	1	1
SI6 - Fowl	1	0.67
SI7 - Fish	1	1
SI8 - Ponds	0.95	0.95
SI9 - Terr'l habitat	1	0.67
SI10 - Macrophytes	0.6	0.4
HSI	0.89	0.60

Pond Ref	National Grid Reference	Pond Suitability	Description
1	SJ37845737	0.89 Excellent	Located just outside the eastern site boundary. Circular in shape, surrounded by rough grassland, tall ruderal and Willow sp. scrub that affords superb connectivity to nearby hedgerow. Contains semi-aquatic plants, a thin line of oil/pollution is found on the surface of the water, water turbidity is low/clear (1/5) and the base of the pond contains leaf litter. Banks are moderately inclined and the estimated depth is 1.5ft deep centrally. Proximity to impact development zone is immediate.  Pond 1 - As viewed from the south-west

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			 Pond 1 - As viewed from the east
2	SJ37715737	0.60 Average	Located 45 metres south-west of site boundary off site. A circular pond with central island, surrounded by tall/ruderal, limited scrub otherwise improved grassland. Good connectivity to nearby hedgerows. Pond contains Fool's Water-cress and a <i>Veronica</i> sp., water turbidity is low/clear (2/5). Banks are shallow, estimated max depth of 2ft in areas Mallard duck pair present during survey, separated from development site.  Pond 2 - As viewed from the north

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Appendix II: Preliminary Ecological Appraisal - Tyrer Ecological Consultants Ltd
(Dec 2018)

End