

**PROTECTED SPECIES:
SUPPLEMENTARY REPORT
FOR LAND TO WEST SIDE OF
ELLESMERE LANE,
PENLEY
WREXHAM
LL13 0LP**

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1 INTRODUCTION

1.1 BACKGROUND

EVR Ecology undertook a protected species assessment and Phase One habitat survey on land on Ellesmere Lane, Penley, Wrexham on 26th March 2014. The site was approximately 2 hectares in size. There are no structures on site. Results and recommendations were given in the ecology report number 2013(14)/VC/69 (EVR Ecology, 2014).

Recommendations included further surveys as follows:

- **It will be necessary to establish whether GCN are present in Ponds 1, 2 and 5.** The survey season for GCN is March to June, with at least 2 survey sets being undertaken in the period mid-April to mid-May. Initially, 4 sets of survey visits are made to the pond and various protocols including trapping, netting and torch searching undertaken. If GCN are found to be present, then 2 further surveys will be completed, with a total of 6 visits undertaken to establish populations.
- A minimum of 2 evening surveys will be required during the main active season of May to August to establish whether the oak tree is being used as a roost and to monitor edge activity at the west side.

EVR Ecology was commissioned to undertake bat surveys in July 2014. Two emergence surveys were conducted on the oak tree at the west boundary and 2 transect surveys were undertaken around the field boundaries on 24th and 29th July 2014.

It was not possible to undertake the surveys for great crested newts and so potential impacts were assessed from information gathered from

- A data search from the North Wales Biodiversity database (COFNOD)
- Data from pond surveys conducted by NLG Ecology Limited for United Utilities in respect of the Vyrnwy pipeline (NGL Ecology, 2010). These data are reproduced in this report with the consent of United Utilities
- A search on Wrexham Planning Portal for recent (last 4 years) planning applications in Penley .

1.2 SCOPE OF SURVEYS AND SUPPLEMENTARY REPORT

This report covers the results of the surveys undertaken for bats and great crested newts as stated above. It uses results from the original surveys in March 2014 and the additional surveys undertaken to provide conclusions, recommendations and mitigation given in this supplementary report. Data, conclusions and recommendations for all other species and the site habitat are given in the 2014 report by EVR Ecology (EVR Ecology, 2014).

1.3 PERSONNEL

Val Cooper is a professional consultant and bat specialist. She has over 15 years experience in surveying and conservation work on mammals and amphibians, and holds licences for surveying bats and great crested newts. She is experienced in preparing and delivering protected species licences. She has a BSc in Zoology/Psychology (Joint Honours) and MSc (with distinction) in Restoration Ecology. She has been a licensed bat worker and member of the Cheshire Bat Group since 1994. She works as a Voluntary Bat Warden for Natural England and participates in the annual National Bat Monitoring Programme of the Bat Conservation Trust. She is a full member of the Chartered Institute of Ecology and Environmental Management. She holds a bat class NE licence, number CLS998 and a NRW licence number 54706:OTH:CSAB:2014 .

Dr Elizabeth Barratt is a mammal ecologist and bat specialist. She is a professional consultant with over 23 years experience in mammal conservation and survey work, specializing in bat ecology. She has been a licensed bat worker and member of the Cheshire Bat Group since 1986 and is a Voluntary Bat Warden for Natural England, participating in the annual National Bat Monitoring Programme of the Bat Conservation Trust. Dr Barratt is a full member of the Chartered Institute of Ecology and Environmental Management.

2 METHODOLOGY

2.1 DESK SURVEY

2.1.1 Great crested newts

A COFNOD search was requested for records of GCN within a 1km radius of the site. Connectivity to ponds within 500m was assessed.

Planning applications for the Penley area were search for and, where available, ecology reports for the sites examined. This information, in conjunction with results from 2014 assessment and the present survey data collected on the additional surveys undertaken, were used in the conclusions and recommendations in this report supplement.

2.1.2 Bats

A COFNOD search for any records within a 1km radius of the site was requested.

2.2 FIELD SURVEY

2.2.1 Great crested newts

A check was made on the GCN fencing installed to the SE of the proposed development site, as part of the mitigation for the Vyrnwy pipeline, to establish presence and route.

Pond 2 (**Figure 2**) was rechecked for depth and netted for the presence of GCN larvae.

2.2.2 Bats

One observer was stationed at the west side of the field to monitor the identified holes in the oak tree and the woodland edge at the SW corner of the site. A second observer completed a transect survey around the field edge. Transect route and points are given in **Figure 1** below. Monitoring began ½ hour before sunset and continued until 1 ½ hours after. EM3+ detector and Bat Box Duet Frequency division detectors were used to monitor bat activity. Recordings were made using EDIROL R-09HR MP3 recorders.

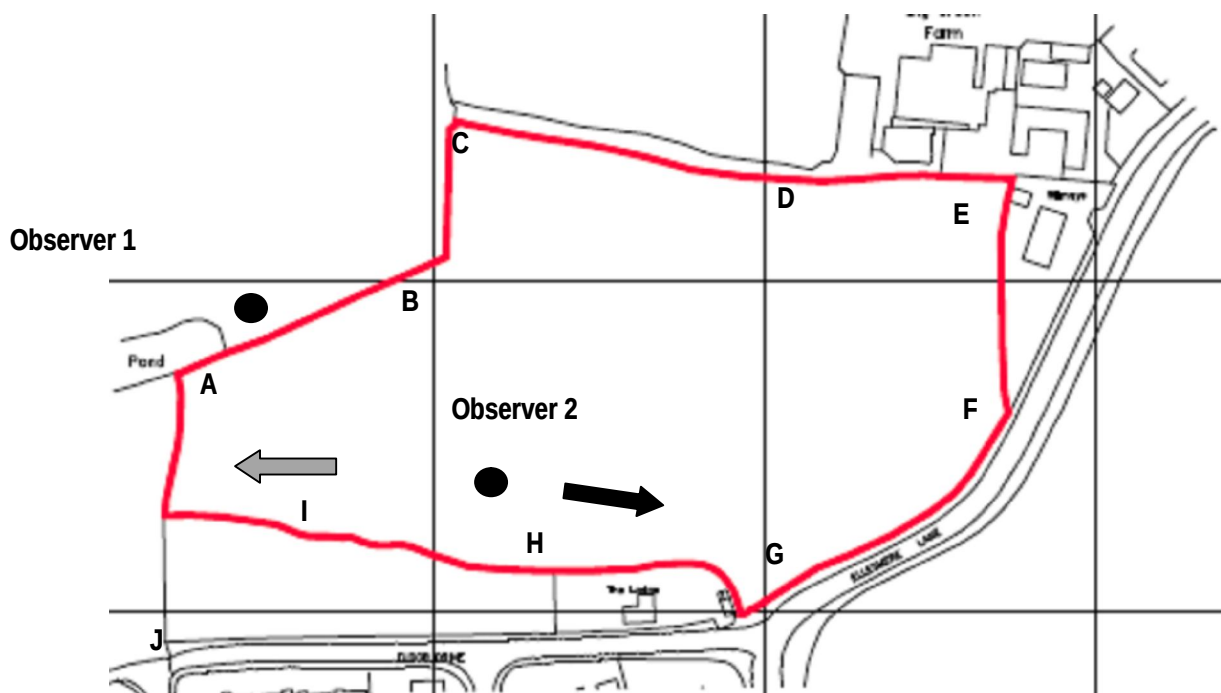


Figure 1: Transect points

Key	Transect direction:
	24 th July 2014
	29 th July 2014

3 RESULTS

3.1 DESK STUDY

3.1.1 Great crested newts

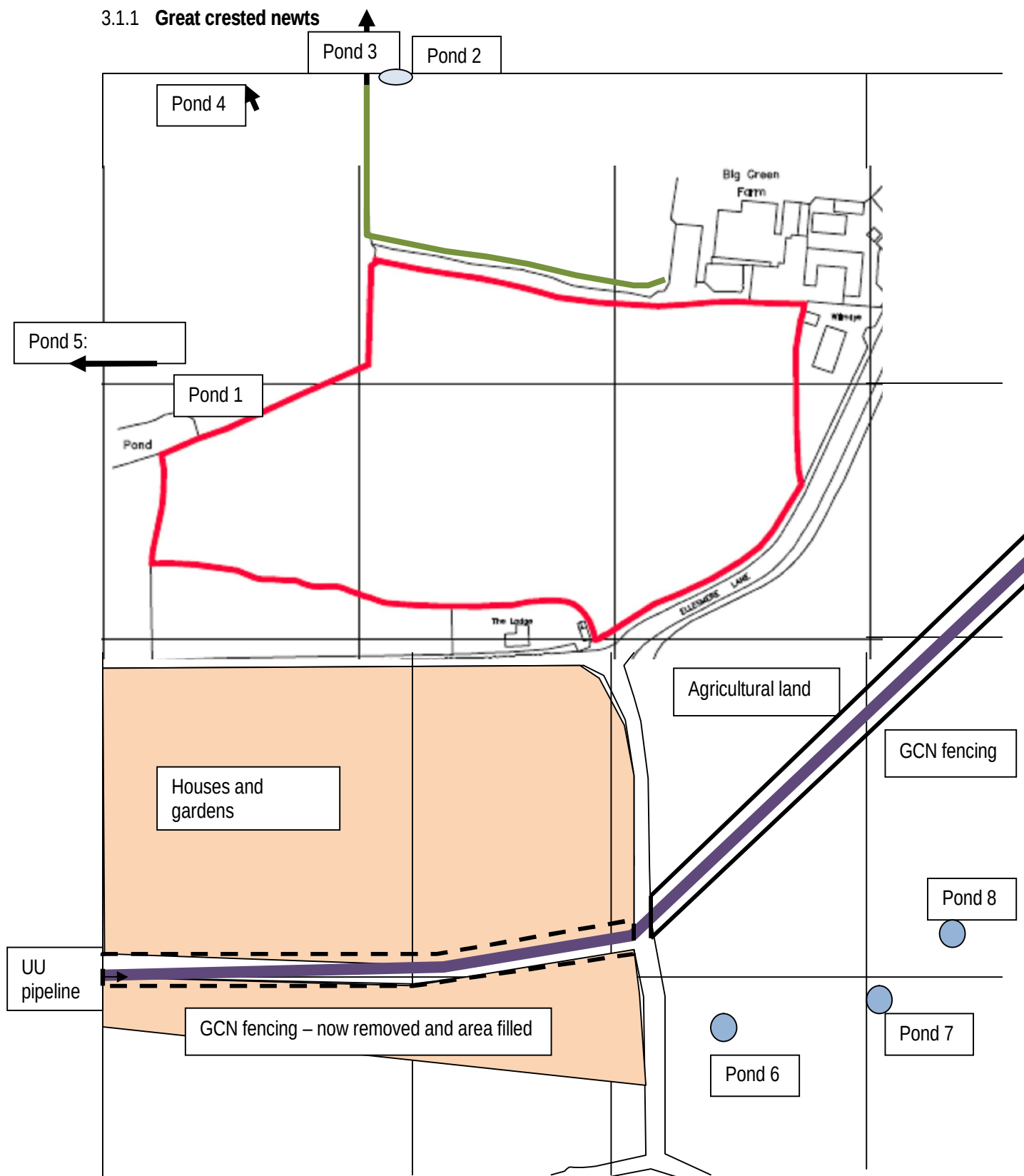


Figure 2: Positions of ponds and UU pipeline and GCN fencing

COFNOD search results

Great crested newt records were found for 3 (Ponds 6 to 8 in **Figure 2**) ponds within 500m of the target site. Six records were within 250m of the site. All were on the opposite side of the pipeline route and temporary GCN fencing (see Section 3.2.1). **Appendix 1** provides data search results (public domain).

Table 1: Pond distances and GCN status (with date of record)

POND	DISTANCE	GCN status	Date/source of record
Pond 1	adjacent	No GCN present (Smooth newt recorded as present)	NLG Ecology 2010 (COFNOD and NLG (2010))
Pond 2	90m north	Unknown	No records from COFNOD. Outside pipeline impact area.
Pond 3	209m north	Unknown	No records from COFNOD. Outside pipeline impact area.
Pond 4	215m NW	Unknown. Pond condition poor	No records from COFNOD. Outside pipeline impact area.
Pond 5	256m WNW	Unknown. Pond condition excellent for GCN	No records from COFNOD. Outside pipeline impact area.
Pond 6	212m SE	Small, breeding GCN population)(5 +EGGS)	COFNOD: ADAS, 2008
Pond 7	240m SE	Small, breeding GCN population (6 + EGGS)	NLG Ecology 2010 (COFNOD and NLG (2010))
Pond 8	221m SE	One female GCN 3 GCN (max. no.) + EGGS 9 GCN (max. no.) + EGGS 3 GCN (max. no.) + EGGS	NLG Ecology 2010 (COFNOD and NLG (2010)) NLG Ecology 2010 (COFNOD and NLG (2010)) ADAS 2008 ADAS 2008

Records from Vyrnwy Pipeline report (NLG Ecology 2010)

Map and Table data from NLG are in the report NLG Ecology, 2010, pages 14 and 37.

Eighteen other GCN records were logged for ponds ranging in distance from 600m to 1.2km. All but five logged small breeding populations. One of these had a medium population (22 maximum count for pond at 1km to the NE). NO specific data were given for the other 4.

Table 2: Connectivity of ponds at Ellesmere Lane site

Pond 1	adjacent	Excellent connectivity to site and to hedge along south side of site
Pond 2	90m north	Good connectivity along the hedge running north from the end of the public footpath
Pond 3	209m north	Poorest connections, with only a circuitous route along the hedges. Good connections to Pond 4, which is 120m to the west of this pond.
Pond 4	215m NW	Some connection to site via hedges.
Pond 5	256m WNW	220m from Pond 1. Good connections via excellent GCN habitat (woodland) to the south of the pond
Pond 6	245m SE	Fair. Open fields between and a road (not insurmountable, but a residential road with kerbs and drains being a deterrent). No direct hedge or other linking habitat
Pond 7	288m SE	As above
Pond 8	317m SE	As above

Assessment for Ponds 6-8 are affected by the presence of temporary fencing from 2012 to the present, which reduces connectivity to the site.

Planning applications

Two applications for the immediate area were found:

- The Lodge, Tudor Drive, Penley, LL13 0LR: P/2014/0358. This is the strip of land directly adjacent to the target site on the south side. No ecology report was available on the website.
- Land area at NW side of Ellesmere Lane: P/2014/0392. The site is 240m NE of the target site. The ecology report available is a scoping study and no presence absence surveys were undertaken.

3.2 FIELD SURVEY

3.2.1 Great crested newts

Inspection of GCN fencing and pipeline route

The route of the pipeline at the south end of Ellesmere Lane (**Figure 2**) and the route across the A539 to the north (**Figure 3**) were examined for GCN fencing. There was fencing present at the south section extending NE towards the A539. To the south of Ellesmere Lane the pipeline trench was filled and the fencing removed (**Figure 2**). Fencing was present on the south side of the A539. No fencing was found at the road edge on the north side of the main road. The pipeline route was filled and the ground levelled.

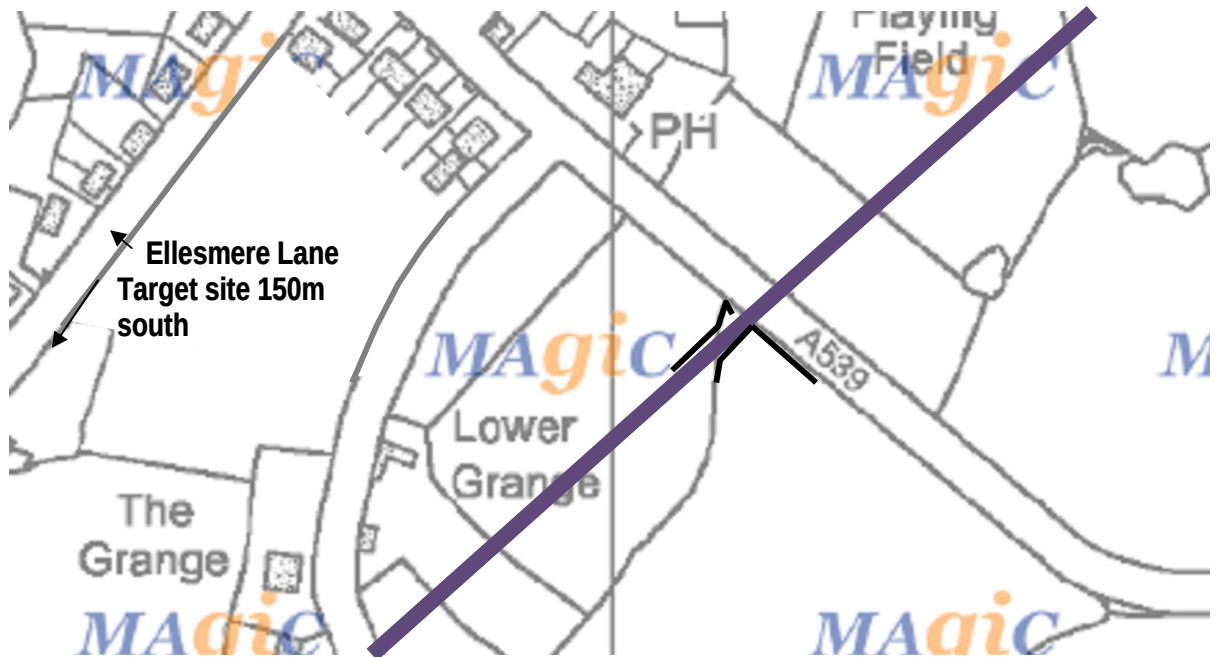


Figure 3: Pipeline route across A539. Visible GCN fencing from road (field not accessible)

Inspection and netting of Pond 2

Pond 2 had very little standing water, an area of <4m² in the centre of the pond. This was covered in floating vegetation, which could not be identified from the pond edges. A ring of emergent and marginal vegetation, about 2-3m deep, surrounded the entire pond and some areas in the pond perimeter had terrestrial grasses growing in them. Dipping was limited to 3 areas at the north, west and south sides.

Invertebrates found were limited in variety with greater water boatmen the dominant species caught (over 15 per sweep). Ramshorn snails, leeches, water flea, midge pupae and sludgeworm were present. No amphibian larvae were caught.

Identification of potential refuges, foraging areas on site

Seven 7 areas were identified in the 2014 report (EVR Ecology, 2014) as having potential for use as refuges by great crested newts. They are illustrated in **Figure 7** and listed below:

- 1) Long grasses and rutting, with pools of water and fissures, at the west boundary
- 2) Fence line at NW and west boundaries where the grasses are long and tussocks have developed
- 3) Large patch of short annual/perennial plants at north boundary
- 4) Woodland edge where there are long grasses and undergrowth very close to Pond 1
- 5) Hedge boundary with long grasses and some ruderal growth at base
- 6) Hedge boundary as above
- 7) The long grasses and tussocks along the fence line at the north boundary.

On 24th and 29th July visits to the site, it was noted the west area (1 in **Figure 4** below) had not been cut and had established an area of tall vegetation interspersed with shallow pools and wet areas. Rush and hairy willowherb were present. Grass species were dominant. Area 3 had been cut closer to the field edge and the margin reduced to approximately 1m.

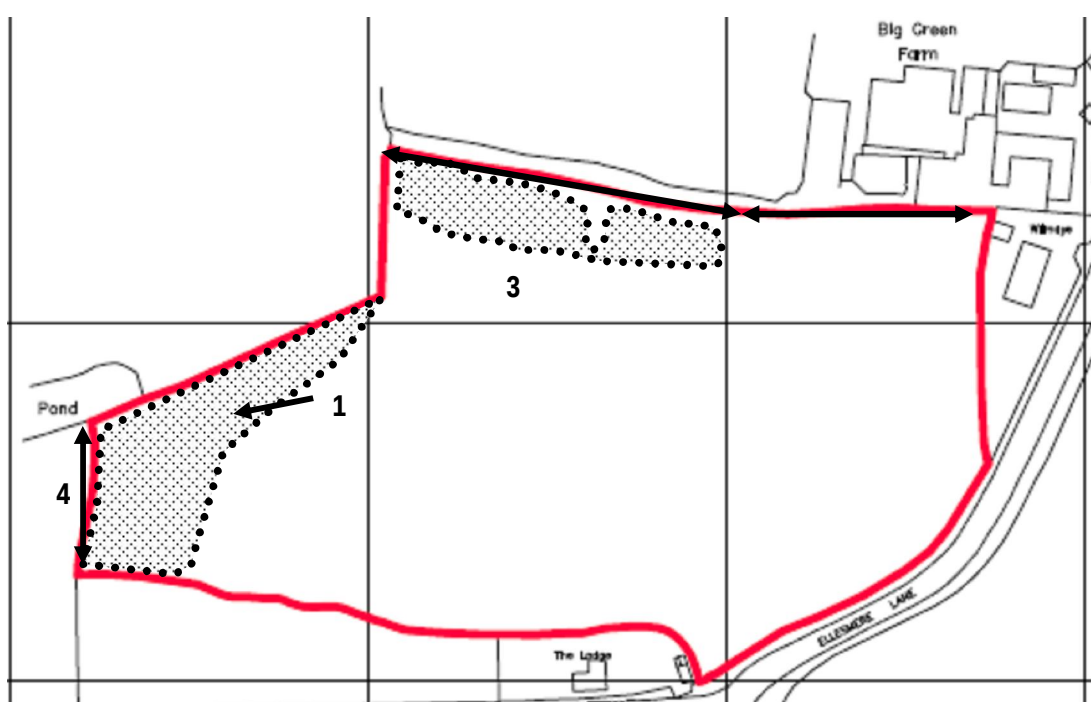


Figure 4: Potential refuge areas for GCN (March 2014)

3.2.1 Bats

Conditions for surveys on 24th and 25th July 2014

Table 3: Timing and conditions for emergence survey on 24th July 2014

	Time	Temperature	Wind	Cloud cover	Precipitation
Start	21.00	22°C	Still	100%	Dry
End	23.00	13.5°C		70%	
Sunset	21.16				

Table 4: Timing and conditions for emergence survey on 29th July 2014

	Time	Temperature	Wind	Cloud cover	Precipitation
Start	20.45	19.5°C	Still	100%	Dry
End	22.40	14°C		60%	
Sunset	21.10				

Tree surveys results for survey on 24th and 29th July 2014

The tree was monitored throughout the survey period on all sides. Results were:

- No bats were seen exiting from any of the splits identified or from any other area around these sides of the tree
- No bat activity was recorded in the tree area until 21.53 (sunset was 21.16)
- 3 species of bat were recorded, with most activity centre on the trees to the west of the pond (Figure 5)
- Activity was concentrated at the west boundary, mainly over the fence in the neighbouring field, along the edge of the pond and along the woodland edge
- The woodland edge at the target field side had limited activity, with only 4 recorded contacts at point J (**Table 7**).
- A higher level of activity was recorded at the east side, with bats using the neighbouring gardens, with occasional forays into the field
- All recordings of *Myotis* have characteristics of whiskered/Brandt's bats.

Table 5: Emergence survey on 24.07.2014

Observer 1 ~ oak tree by pond		
time	species	activity
21.53	<i>Pip 55</i>	Commuting pass (CP), Heard not seen (HNS)
22.11	<i>Pip 55</i>	Foraging (F) & CP ~ slow call,
22.15	<i>Pip 45</i>	F over willow at end of pond
	<i>Pip 55</i>	CP, whiskered/Brandt based on slope of call
22.20	<i>Pip 45</i>	CP round edge of willow at end of pond
22.24	<i>Pip 55</i>	CP brief contact, seem to be running along woodland edge over pond
22.30	<i>Pip 45</i>	CP and foraging round edge of willow at end of pond
22.31	<i>Myotis sp</i>	Flying out over field
22.32	<i>Pip 55</i>	CP along hedge towards pond
22.38	<i>Pip 55</i>	Flying out over field

Table 6: Emergence survey on 29th July 2014

Observer 1 ~ oak tree by pond		
time	species	activity
21.40	<i>Pip 45</i>	Feeding at east side
21.47-21.54	<i>Pip 45</i>	5 CP from the north along the poplar line and fence to the pond, and round to west along tree line towards Pond 5 (Figure 1)
21.58	<i>Myotis</i>	Seen over pond and along west tree line
21.59	<i>Pip 55</i>	HNS
22.01	<i>Pip 55</i> <i>Myotis</i>	All from north, round field and over pond heading west
22.05 – 22.10	<i>Myotis</i>	Chasing over pond, round observer and into trees at west side
22.08	<i>Pip 55</i>	2 bats feeding over target field and crossing into field to west over fence line
22.10	<i>Pip 55</i>	Feeding in west field and circling over fence and round poplars
22.15		Gone quiet

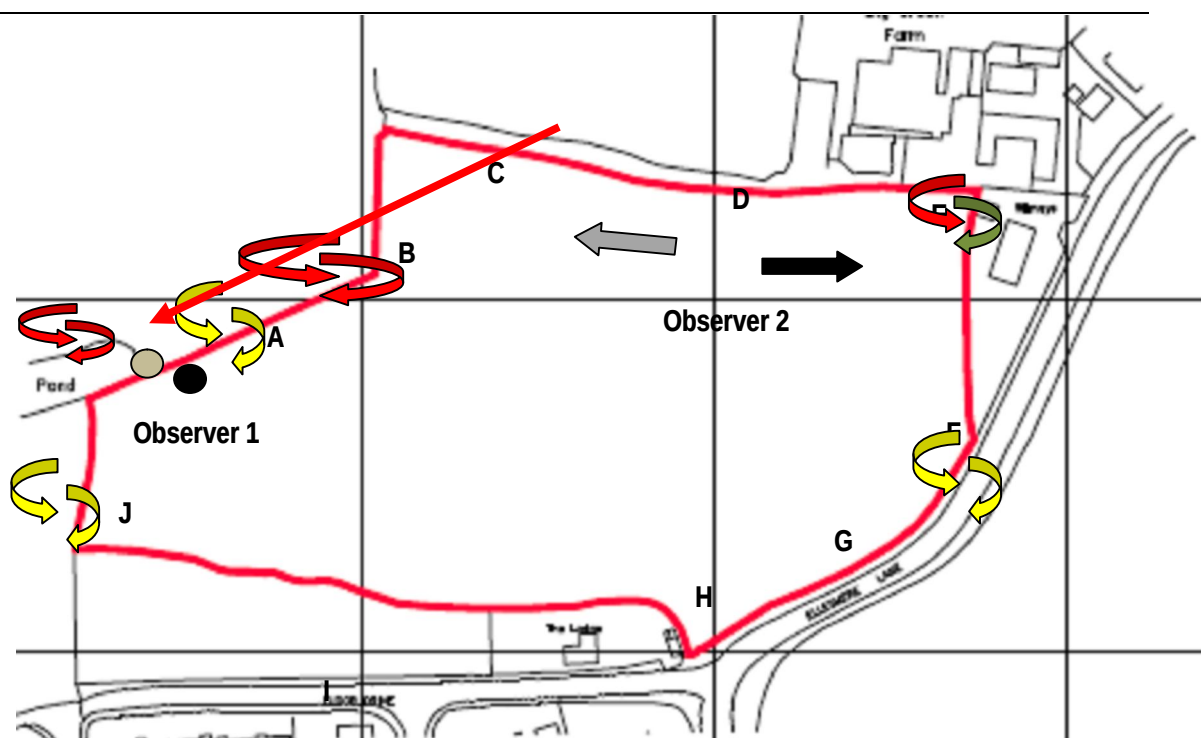


Figure 5: Main areas of bat activity. Common pipistrelles are in red, soprano in green and *Myotis* in yellow. Oak tree is shown in brown.

Table 7: Transect survey results

Observer 2 ~ 24 th July 2014			
Point	time	species	activity
A	21.45	<i>Pip</i> 45	CP from north
B	21.55, 21.56	<i>Pip</i> 45	2 bats CP
C	22.00	<i>Pip</i> 55	CP along hedge and to north
D	22.05		Nothing
E	22.08	<i>Myotis</i>	Feeding in gardens over hedge (houses adjacent)
F	22.14	<i>Myotis</i> <i>Pip</i> 55	Feeding in garden. 2 bats crossing over hedge and into garden, chasing
G	22.18	<i>Noctule</i>	Several passes heard. Not seen
H	22.23		Nothing
I	22.34	<i>Pip</i> 55 <i>Myotis</i>	CP from south over hedge CP. HNS
J	22.45	<i>Pip</i> 45	HNS CP
Observer 2 ~ 29 th July 2014			
Point	time	species	activity
J-A	22.26	<i>Myotis</i>	
B	22.17	<i>Pip</i> 45	2 bats CP as above in quick succession
C	22.12	<i>Pip</i> 55	CP along same line as above
D	22.10	<i>Pip</i> 55	CP
E	22.05	<i>Pip</i> 45,55	Foraging
F	21.56 22.00	<i>Pip</i> 45,55 <i>Myotis</i>	Heard foraging
G	21.55		Nothing
H	21.50		Nothing
I	21.45		Nothing
J	21.33 21.42	<i>Myotis</i> <i>Pip</i> 55	2 Brief contacts

3.2.1 **Badgers:** See additional note.

4 ASSESSMENT

4.1 CONSTRAINTS OF SURVEY

- 4.1.1 Full pond surveys on Ponds 2 and 5 could not be undertaken as the time of year was not appropriate.
- 4.1.2 The ground around Pond 2 was too uneven, boggy and waterlogged to safely access to dip the pond fully.

4.2 CONCLUSIONS

4.2.2 Great crested newts

Conclusions in the first report (EVR Ecology 2014) were

- Three of the 5 ponds in 250m have good potential to support great crested newts
- There is potential for great crested newts to forage and take refuge on the site
- There is some potential for GCN to cross the field
- If GCN are present in Ponds 1, 2 and/or 5, there is potential for them to be on site and for adverse impacts on the species due to the development
- At present there is insufficient information to assess these potential impacts.

From the additional information it is concluded:

- In 2010 there were no GCN present in Pond 1, which is the closest pond at the very edge of the site. This pond has been isolated from the closest ponds in the south (Ponds 6-8) since 2012 at the latest, due to the works on the pipeline and the presence of GCN exclusion fencing along the length directly between the site and the ponds. This will have reduced considerably any potential for GCN to disperse from these ponds to Pond 1
- Ponds 2 and 5 are in a similar position and therefore subject to a similar constraint on potential for GCN to be present
- Presence of GCN in the south ponds 6 and 8 was recorded in 2008 (COFNOD record), but no GCN were recorded in Pond 1 in 2010
- Numbers had reduced in the south ponds between 2008 and 2010
- These data indicate that the potential for dispersal from the south ponds to the site is very low and was very low prior to the pipeline work. Colonisation of Pond 1 had not happened between 2008 and 2010 even though there is some connectivity, Pond 1 is good for GCN and at that time no additional barriers to movement were present. Therefore it is very unlikely that Pond 1 has been colonised in between 2010 and the present day
- As there has been no dispersal to Pond 1 it is extremely unlikely that Ponds 2 and 5 have GCN, as it would be expected that they would then be present in Pond 1
- Northern ponds (over the A539) are too distant and separated by the main road to provide a potential source of GCN for the ponds close to the site
- It is therefore concluded that it is very unlikely that GCN that will be present on the site and are using it as a refuge and foraging area
- Amphibians (smooth newts) are present and it will be recommended that all work will be undertaken using reasonable avoidance measures (RAMS) and that there will be a section of the west side of the site that will be set aside as a buffer zone between the pond and the western part of the development.

4.2.3 Bats

Conclusions are:

- Bats are not using the oak tree as a roosting place. Activity indicated there was no interest in the tree and timing of activity indicated that bats had arrived on site from elsewhere. Pipistrelle contacts were all over ½ hour after sunset and Myotis, apart from one contact at J, were ¾ hour after
- The commuting passes recorded from common pipistrelles on 29th July indicate a potential flight route from roost to feeding area along the west side of the site
- Most activity was concentrated at the west side and in the gardens on the east side

- There was very limited activity over the field itself, restricted to the west side of the field
- There is potential for the development at the west and east sides to impact on foraging areas for bat species using the periphery of the site
- It will therefore be recommended that best practice measures will be used in the design of the lighting regime for the new houses and a buffer area created between the west boundary and the development to prevent loss of foraging due to increase disturbance close to the west boundary.
- It will also be recommended with the installation of bat boxes on the west side in new housing to provide enhancement of roosting potential of the site.

4.3 POTENTIAL IMPACTS

4.3.1 Great crested newts

GCN: short-term impacts

There are ponds within 250m of the site. There is a small potential impact for disturbance, injury or death through the possibility of amphibians crossing the site during works. The potential for short-term impacts is assessed as low because:

- Potential for GCN to be present is low
- Any short-term impacts can be removed by reasonable avoidance measures (RAMs)

The potential for impact is assessed as small and it will be addressed by mitigation measures. It is concluded that any potential impacts can be mitigated by using best practice, including reasonable avoidance measures, during the development work.

GCN: Habitat loss

There is a small loss of good potential GCN habitat. This will be reduced by the retention of a portion of the rough grass area to the west side, reducing loss to under 0.1hectare. Overall loss is approximately 2 hectares. Using the risk assessment calculation (NE – GCN application form) loss of 1-5 hectares of land over 250m from breeding pond is calculated as green, which is no offence likely. Ponds 6 – 8 are only just under 250m and, taking that in addition to the barriers already cited, would indicate that in this instance an offence was unlikely.

Potential loss will be mitigated for by provision of a wildlife area and enhancing any intended landscaping with features that are attractive to amphibians and other wildlife (see **Section 5: Mitigation**)

GCN: Fragmentation and isolation

There are no potential impacts identified at this time. However, construction of housing with enclosed fence areas will result in the prevention of potential future movements of GCN. The connectivity will remain around the existing site with the retention of hedges. Best practice is to create gardens that do not exclude the movement of wildlife (or example through the installation of concrete base/fence panel style boundaries that prevent free movement between gardens) while allowing residents privacy from neighbours (see **Section 5: Mitigation**).

4.3.2 Bats

Developments adjacent to woodland and other areas that bats use for foraging can impact on bat behaviour if best practice measures are not observed. The woodland at the west has good potential and this must be accounted for in the mitigation. This will include best practice in lighting the new development at that side (**Appendix 3**).

4.3.3 Badgers

See additional note.

5 RECOMMENDATIONS AND MITIGATION

5.1 FURTHER SURVEY

5.1.1 Great crested newts

No further survey is recommended at this time.

5.1.2 Bats

No further surveys are required at this time.

5.1.3 Badgers

See additional note

5.1.5 The conclusions and recommendations in this report in respect to surveys for protected species are based upon results from surveys in March and July 2014. These data will only be of use for 1-4 years (depending on species and circumstances) after which further survey to establish the position and possible changes in status will be necessary to ensure all activities are informed and guided by recent data on site status.

5.2 REQUIREMENTS FOR EPS LICENSING

5.2.1 Protected species

No requirement for licensing is identified at this time. This will be reviewed following further survey work.

5.2.2 Caveat

No work must be done on the site prior to the completion of surveys and a final assessment undertaken. Failure to do so may result in an offence under the legislation for protected species (Appendix 2).

5.3 MITIGATION MEASURES

5.3.1 Great crested newts

It is concluded that they are very unlikely to be on site. However there are ponds within 250m of the site and GCN are known to be present within 1km of the site (closest known is 217m to the south). Therefore it is required that reasonable avoidance measures must be undertaken at all times on the site to prevent the possibility of This is qualified by the caveats that

- 1 in all areas where there are ponds it is best practice to undertake works using reasonable avoidance measures (RAMS), to minimise risk of impacts should GCN be present and undetected. These are given below.
- 2 **if at any time during the development great crested newts are found, all work will stop immediately and advice taken from a licensed ecologist or Natural Resources Wales (NRW) as to how to proceed. This would include a review of the licensing position. Failure to do so may result in an offence under the protected species legislation (Appendix 2).**

It is recommended that reasonable avoidance measures (RAMs) are implemented to minimize the potential for any harm to great crested newts and other amphibians during the development. The storage of materials on the site (for example) could provide commuting amphibians with potential places for shelter/refuge. The following RAMs should therefore be implemented:

- No hedge removal will be undertaken in the winter period from November to March. These periods will be subject to variation in the weather patterns of any year. Early onset of cold will extend the period into October, for example, and late cold temperatures in early spring will extend in further into the year.

- All open grass areas that have been maintained at a short sward must continue to be managed in the same way until the start of development to ensure no new refuge potential is created on the site
- The area of longer grass to the west side which is not to form part of the proposed enhancement area will be cleared in the winter period. This is surface clearance and the area has no potential for use as a hibernation area for any amphibians. It will be topped down in November and if required in March to May, from the present until the start of the development. Failure to do so may result in the creation of a sward that will provide potential refuge habitat for amphibians and over-wintering potential
- Land clearance of short sward areas should be undertaken in the periods March to June or November to February (when still cold). These periods are the least likely to impact on amphibians. If undertaken in the intervening periods then it should be done during a dry period
- Any piles of materials brought onto the site must be kept on pallets and not stored on the ground. There are no material piles presently identified on site.
- All building materials (bricks, tiles, concrete blocks etc) etc should be delivered and stored off the ground on pallets or timber baulks
- All loose materials should be delivered to and stored on site in bulk bags, and not be loose tipped on site. Any loose tipped piles that are not compact material must either be stored in bulk bags or enclosed in a fenced compound. This includes stones and pebbles, any large size aggregate pieces etc. Sand, cement and other close packed material may be stored on the ground.
- Excavations should, wherever possible, be back-filled at the end of each working day. Where trenches are excavated for services, the trench should be excavated in the morning, the services laid and the trenches back-filled in the afternoon. Where this is not possible, the trenches should be covered over with sheet plywood and the edges sealed with topsoil to prevent amphibians falling into the trenches.

5.3.2 Bats

The potential impact of the development on the foraging area at the west side of the site will be minimised by the following measures:

- There will be a buffer area of between 4-10m at the west side of the site from the north edge of the woodland to the south hedge. This will provide a wildlife area and prevent direct impact on the west woodland edge
- Lighting regime for the proposed development will be illustrated on a plan and will follow the guidelines provided by the Bat Conservation Trust (**Appendix 3**). Lighting will be low wattage, downward pointing and cowled to prevent scatter
- No lighting will be installed within 15m of the west woodland edge. Any lighting on the west side must not be directed towards the boundary and there will be no light scatter towards the boundary
- No lighting will be directed towards any of the site boundaries
- 6 Schwegler 1FE boxes with back plates will be installed on the houses at the western side of the site. They will be built into the fabric, at a height of at least 3m and orientated to the west and south. No lighting will be installed close to them. Boxes must not be put above apertures as this may lead to problems with bat droppings if they are colonised. The bat boxes are long-lasting, self-cleaning and require no maintenance.

5.3.3 Conservation and enhancement measures

A redevelopment provides opportunities to enhance a site for wildlife and is recommended on sites where there is potential for wildlife and site features that may be used as foraging areas and/or commuting pathways for bats and other species. It is therefore recommended:

- Where possible, the mature trees and hedgerows on around and near the site should be retained. These have potential to develop into natural roosting sites.
- **Removal of any large, mature trees should only be done following an inspection for potential roost holes for bats.**

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- It is also recommended that insect attracting shrubs be incorporated into planting schemes for the gardens and/or public areas to encourage the presence of insects and thereby provide suitable foraging sites for local bats which have been observed to use the site for foraging (see **Appendix 4**).
 - The landscape should be managed where possible to maintain the small mammal populations and the insect population that is attracting bats. Shrub and less well-managed areas will create habitats to attract small mammals, birds and invertebrates

Further information can be found in *Bat Mitigation Guidelines* (2004) available from Natural Resources Wales.

5.3.4 **If any protected species are found during any work being undertaken during the clearance and construction on the site then all work must stop and a qualified ecologist or NRW contacted for advice as to how to proceed. Failure to do so may result in an offence under the legislation detailed in Appendix 2.**

5.3.5 **Badgers**

See additional note.

6 REFERENCES

- BCT (2007) *Bat Surveys Good Practice Guidelines* Bat Conservation Trust
- English Nature (2004) *Bat Mitigation Guidelines* Version January 2004
- English Nature (2001) *Great Crested Newt Mitigation Guidelines* Version August 2001
- EVR Ecology (2014) *Phase One habitat survey and protected species assessment for land at Ellesmere Lane, Penley* Report Number 2013(14)/VC/69 Issued 8th April 2014
- JNCC (2004) *Bat Workers Manual* Third Edition.
- JNCC (2001) *Habitat management for bats*
- Langton, T.E.S., Beckett, C.L. and Foster, J.P. (2001) *Great Crested Newt Conservation Handbook* Froglife.
- Natural England (2007) *Badgers and Development: A Guide to Best Practice and Licensing* Version 09/07
- NLG Ecology (2010) *Great Crested Newt survey report for Vyrnwy pipeline Phase One* July 2010
- Oldham, R.S., Keeble J., Swan M.J.S and Jeffcote, M. (2000) *Evaluating the suitability of habitat for Great crested newts*. Herpetological Journal 10 143-155

7 APPENDICES

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| Appendix 1: | COFNOD data search results |
| Appendix 2: | Legislation and policy guidance |
| Appendix 3: | BCT lighting guidance |
| Appendix 4: | Habitat enhancement |