

Appendix 8.17

Great Crested Newt Survey Report 2014

Abergelli

Abergelli Power Project

Great Crested Newt Survey Report

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Contents

1	Summary	2
2	Introduction	3
3	Methods	4
4	Results	7
	Appendix 1: Photographs of Ponds	10
	Appendix 2: HSI results.	13

1 Summary

- 1.1 Abergelli Power Limited (APL) is promoting a new Power Generation Plant with its associated Gas and Electricity Connections (the 'Project') on agricultural land within Abergelli Farm north of Swansea in the City and County of Swansea (approximately at National Grid Reference 265284, 201431).
- 1.2 A Habitat Suitability Index (HSI) assessment for great crested newts *Triturus cristatus* (GCN) was carried out at accessible ponds as part of the preliminary ecological appraisal of the Project Site at the time of the survey (hereafter referred to as the 'Survey Site'). The results of the HSI assessment are set out in the Preliminary Ecological Appraisal (BSG, June 2014). APL subsequently commissioned BSG Ecology to undertake a presence/absence survey for GCN of ponds within 150 ha of pastoral farmland at and around Abergelli Farm in May 2014, to inform and support an application for Development Consent for the Project.
- 1.3 Owing to the size and nature of the Survey Site, and the lack of GCN records in the desk study search area, it was recommended that a survey for GCNs be conducted for all ponds within the Survey Site boundary and within 250 m of the Survey Site boundary. A total of five ponds were surveyed including three within the Survey Site and a further two within 250 m of the Survey Site boundary. It was not possible to access a number of ponds, which included:
- seven ponds outside of the Survey Site but within 250 m of the Survey Site boundary; and
 - a further four ponds between 250m and 500m from the Survey Site boundary that formed part of a cluster of ponds, the remainder of which were within 250m of the Survey Site boundary.
- 1.4 The survey did not record any GCNs in the ponds surveyed, although palmate newts *Lissotriton helveticus* were recorded in three ponds and smooth newts *Lissotriton vulgaris* were recorded in two ponds. As a consequence, further surveys to establish the population size class of GCN were not necessary and were not undertaken.

2 Introduction

- 2.1 Abergelli Power Limited commissioned BSG Ecology to undertake a presence/absence GCN survey in May 2014 to inform and support an application for Development Consent for the Project described below.

Site Description

- 2.2 The Survey Site consists of approximately 150 ha of pastoral farmland primarily grazed by horses. The extent of the Survey Site is shown in Figure 1 in Appendix 1 and is centred at National Grid Reference 265284, 201431. The nearest settlement is Felindre, which is located approximately 2 km to the north of the Survey Site, with Swansea approximately 5 km to the south.
- 2.3 The Survey Site is largely agriculturally improved pasture with several areas of marshy grassland, particularly in the north, south and north-western ends of the Survey Site. The fields are bounded by fences, running along the line of defunct hedgerows, and often accompanied by ditches. There is a block of broadleaved woodland on the eastern boundary of the Survey Site and other areas of woodland around the marshy grassland to the west of the Survey Site, and around Felindre Gas Compressor Station and the two National Grid 400 kV electrical substations that lie at the south-west end of the Survey Site. The habitats in the surrounding landscape are similar to those within the Survey Site boundary – a mixture of improved and marshy grassland interspersed with occasional patches of woodland.

Description of Project

- 2.4 APL is promoting a new Power Generation Plant with associated Gas and Electricity Connections within Abergelli Farm. The Power Generation Plant would operate as a Simple Cycle Gas Turbine (SCGT) peaking plant and would be designed to provide an electrical capacity of up to 299 Megawatts (MW). It would be fuelled by natural gas, supplied by a new underground gas pipeline connecting the Power Generation Plant to the existing National Grid Gas (NGG) National Transmission System (NTS). It would also connect to the National Grid Electrical Transmission System (NETS) via underground cable or overhead lines.
- 2.5 BSG Ecology has been appointed as the ecological consultant to undertake an ecology survey, which includes a desk study and Extended Phase 1 Habitat Survey as well as a range of Phase 2 surveys, including presence / absence survey for GCNs. These baseline surveys will be included in an appendix to an ecology chapter of an Environmental Statement, which is intended for submission, in support of the application for Development Consent.

Aims of Study

- 2.6 The aims of the GCN survey were to identify whether GCNs are present in the ponds within the Survey Site and those within 250 m of the Survey Site boundary using standard survey methods (as specified in Section 3).

3 Methods

Desk Study

- 3.1 Existing ecological information for the Survey Site and its surrounding area was requested from the South East Wales Biodiversity Records Centre (SEWBReC). Information on protected¹ species, including GCNs, was requested covering the Survey Site and land up to 2 km from the Survey Site boundary. The National Biodiversity Network Gateway² was also checked for records for 1 x 1 km grid squares in which GCN records have occurred. In addition, on-line mapping and aerial photography of the area were also reviewed to identify ponds that might be present within the Survey Site and 500 m of the boundary based on recommendations made in the Natural England (formerly English Nature) GCN Mitigation Guidelines³ (the selection of an appropriate buffer distance for survey is explained in more detail below).

Scoping (HSI) Survey

- 3.2 A Preliminary Ecological Appraisal was carried out by BSG Ecology in February 2014 and updated in April 2014⁴. As part of this survey, all accessible ponds within 250 m of the Survey Site were visited and assessed against the criteria of Oldham *et al.* (2000)⁵. This was to establish the likelihood of their use by GCNs using a Habitat Suitability Index (HSI), and to identify the scope of the GCN presence/absence field survey described below.
- 3.3 The information collected during the HSI assessment provides context of how ponds within or in proximity to the Survey Site may connect with habitat available for newts in the surrounding landscape, and also to give greater confidence to the assessment carried out on each pond.
- 3.4 Information on the physical features and characteristics of each pond within 250 m of the Survey Site was collected, to enable an HSI score to be derived for each pond, by applying the scoring system developed by the Herpetological Conservation Trust (HCT, 2008)⁶. Where a cluster of ponds was found (P01-P08; see Figure 1) with some ponds within 250 m of the Survey Site and some ponds beyond this distance, the intention was to carry out an HSI on all ponds within the cluster (although lack of access prevented this in this case).
- 3.5 The HSI is calculated by allocating scores to features associated with each pond including features such as size, quality of surrounding habitat and presence of fish. These scores are then used to calculate the overall HSI for each pond as a number between 0 and 1, with 0 being the least suitable and 1 being the most suitable. The HSI score allows each pond to be placed in one of five categories defining its suitability for GCNs as follows:
- <0.5 = poor
 - 0.5 – 0.59 = below average
 - 0.6 – 0.69 = average
 - 0.7 – 0.79 = good
 - >0.8 = excellent
- 3.6 In addition, there are a number of wet ditches present within the Survey Site and within 250 m of the Survey Site boundary. All of the wet ditches are narrow (<1 m width) and did not hold more than a few centimetres of water during February – June 2014 despite an exceptionally wet winter.

¹ Wildlife and Countryside Act 1981 Schedules 1, 5 & 8; Conservation of Habitats and Species Regulations 2010; Protection of Badgers Act.

² <http://www.nbn.org.uk/>

³ English Nature (2001). The Great Crested Newt Mitigation Guidelines. English Nature, Peterborough.

⁴ BSG Ecology (2014). Abergelli Power Project: Preliminary Ecological Appraisal.

⁵ Oldham, R.S., Keeble, J., Swan, M.J.S., and Jeffcote, M (2000) Evaluating the Suitability of Habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal, Vol. 10, pp. 143-155.

⁶ Herpetological Conservation Trust (HCT) (2008). Habitat Suitability Index – Guidance Notes. National Amphibian and Reptile Recording Scheme.

They are not thought to provide suitable habitat for GCNs and presence / absence surveys are not considered to be required for these waterbodies.

Field Survey

- 3.7 Following the initial HSI assessment (see above) four GCN survey visits were undertaken within the period mid-March to mid-June to establish presence/absence (with at least two surveys during mid-April to mid-May), with an additional two surveys (six in total) required to estimate population size if GCN were found during the first four surveys. The GCN field survey work was undertaken in 2014 and was completed in accordance with the Natural England (2001) GCN Mitigation Guidelines.
- 3.8 In determining the distance at which presence/absence survey of ponds would take place, Natural England guidance has been considered and an approach developed that is proportionate to the likelihood of encountering GCNs (Note that where a survey is conducted in Wales, Natural Resources Wales advise that the Natural England guidance is consulted.)
- 3.9 Natural England guidance on geographical limits of survey is discussed in Section 5.4 of the GCN Mitigation Guidelines which recommends that:
- “For a common situation, where a plot of land containing a pond is proposed for development, the pond itself should be surveyed, and other ponds up to 500 m away should also be checked, if it is thought likely that great crested newt populations centred on these ponds would be affected by changes to the plot.”*
- 3.10 Natural England guidance is further developed in the GCN Method Statement⁷ which states that:
- “In keeping with a proportionate and risk-based approach, surveys need reasonable boundaries. The great crested newt mitigation guidelines explain that surveys of ponds up to around 500m from the development might need to be surveyed. The decision on whether to survey depends primarily on how likely it is that the development would affect newts using those ponds. For developments resulting in permanent or temporary habitat loss at distances over 250m from the nearest pond, carefully consider whether a survey is appropriate. Surveys of land at this distance from ponds are normally appropriate when all of the following conditions are met: (a) maps, aerial photos, walk-over surveys or other data indicate that the pond(s) has potential to support a large great crested newt population, (b) the footprint contains particularly favourable habitat, especially if it constitutes the majority available locally, (c) the development would have a substantial negative effect on that habitat, and (d) there is an absence of dispersal barriers.”*
- 3.11 The approach that has been taken for these field surveys is consistent with the above guidance and advice from Natural England. Where access was available, presence/absence surveys for GCN were carried out on all ponds within 250 m of the Project Site. The exception to this were pond clusters that are interconnected to each other (less than 250 m apart) and which therefore could be considered to be part of the same population (should GCN be found). However, no such ponds (P01-P08 and P012-P014) were accessible as shown on Figure 1. As explained in the limitations section below, it is not considered to be a significant constraint to the findings of the survey that some ponds could not be accessed.

Limitations of study

- 3.12 The GCN field surveys were undertaken within the recommended survey period and in suitable weather conditions apart from the torchlight survey and egg search on 19/05/2014 where heavy rain occurred leaving some ponds turbid, making survey less effective for a short period. Nevertheless, the surveys were considered to be effective despite the reduced visibility.
- 3.13 Two ponds (P07 and P08) located within the Water Treatment Works to the northwest of Project Site that were classified during the HSI assessment as being of ‘average’ or ‘good’ value for GCNs could not be surveyed due to access not being granted by landowners. In addition, access was not granted by landowners to Ponds P01, P02, P03, P04, P05, P06, P12, P13 and P14, which would have been surveyed for presence/absence of GCN, had access been possible.

⁷ Available at www.naturalengland.org.uk/Images/wml-a14-2_tcm6-4103.xls

- 3.14 In considering the significance of not surveying the inaccessible ponds both within and beyond 250 m from the Project Site, it is useful to examine the results of the presence / absence surveys for those ponds that could be surveyed, as well as the results of the desk study, which places the Survey Site into a wider context (see 4.1). The presence/absence survey did not reveal the presence of GCNs in any of the five ponds surveyed, although three of the ponds supported smooth and /or palmate newts and were also thought to provide suitable habitat for GCNs. This included all ponds within the Survey Site, three of which were of 'average' suitability as derived from the Habitat Suitability Assessment. The Survey Site is on the edge of the known range of GCN and the lack of desk study records within 2 km of the Survey Site is consistent with this, as is a search of the National Biodiversity Network website where the closest record of GCN was approximately 7.5 km from the Survey Site.
- 3.15 The conclusion that may be drawn is that since suitable ponds within the Survey Site were not occupied by GCNs, and no GCN records have been located within 7 km of the Survey Site, it is unlikely that GCNs are present in the inaccessible ponds. Notwithstanding this, if any of the ponds that were not surveyed (most are beyond 250 m from the Survey Site) did indeed support GCNs, it is likely that they would be present in such low numbers and at a sufficient distance from the Survey Site as to be unaffected by the Project. A Natural England funded research report into trapping efficiency on sites where GCNs are present (Cresswell and Whitworth, 2004) supports this assertion. It arrives at the conclusion that very few animals were captured at distances greater than 100 m from a breeding pond. As a consequence, it is not considered to be a significant constraint to the findings of the survey that some ponds could not be surveyed.

4 Results

Desk Study

- 4.1 No records of GCNs within 2 km of the Survey Site were returned by SEWBRc. The closest 1 x 1 km Grid Square in which GCN records have occurred is ca. 7.5 km to the south-east of the Survey Site, near Llandarcy⁸.

Scoping survey

- 4.2 Twelve ponds were identified within 250 m of the Survey Site boundary with the aid of aerial photographs and OS maps. Of these, two (P16 and P17) were identified within the Survey Site boundary, 10 (P05, P06, P07, P08, P09, P10, P12, P13, P14, and P15) were located within 250 m of the Survey Site and another four (P01, P02, P03, and P04) beyond 250m of the Survey Site but forming part of a cluster of ponds (with P05-P08) within the Water Treatment Works to north-west of the Survey Site. An additional on-site pond (P11) was found whilst carrying out other survey work on 21 May 2014 in the marshy grassland in the north-west of the Survey Site. An HSI assessment was carried out on the seven ponds that were accessible within 250 m of the Survey Site boundary during the first Phase 1 survey visit (in February). This included: the two on-site ponds (P16 and P17); one pond within 100 m of the Survey Site boundary (P15); and ponds within 250 m of the Survey Site boundary for which access was possible (P07, P08, P09 and P10). An HSI assessment was also carried out on P11 following its discovery in May 2014.
- 4.3 Figure 1 shows which ponds were surveyed and which were inaccessible on private land.
- 4.4 Table 1 below summarises the results of the HSI, and detailed results are provided in Appendix 3.

Table 1: HSI Results

Pond	HSI	Value for GCNs
P07	0.67	Average
P08	0.77	Good
P09	0.47	Poor
P10	0.64	Average
P11 on site	0.39	Poor
P15	0.66	Average
P16 on site	0.61	Average
P17 on site	0.53	Below average

- 4.5 The Survey Site lies in a part of Wales where the distribution of GCNs is patchy, with the species largely absent to the west of the Survey Site. Whilst this reduces the probability that GCNs would be present within the Survey Site, it does not rule out their presence. There are a number of ponds in and around the Survey Site, and suitable habitat for newts in their terrestrial phase, including old hedge banks, marshy grassland and woodland within the Survey Site. Accordingly, whilst the ponds surveyed did not have a 'good' or 'excellent' HSI score, they did have potential to provide breeding habitat for GCNs.
- 4.6 The scoping exercise concluded that surveys should be carried out on all ponds within 250 m of the Survey Site boundary, except P09, which was a small recession with a small amount of water in February and completely dry in April. In addition the cluster of inaccessible ponds within the grounds of the water treatment works (to the north-west of the Survey Site) are likely to be of similar 'good' quality as Pond 08 (which was visible through the gate) and it was concluded that surveys of this cluster of ponds (including P01, P02, P03 and P04) should also be carried out following the rationale explained in Section 3.7.

⁸ <https://data.nbn.org.uk/imt/#3-4.231,51.507,-3.293,51.781!091EHm!081EHm>

Field Survey

- 4.7 GCN presence-absence surveys were carried out on Ponds P10, P11, P15, P16, and P17. P15 dried out completely between the first and second visits and was only surveyed once. The ponds within the Water Treatment Works (P01-P08), including four ponds beyond 250m from the Survey Site could not be surveyed: access to these ponds was denied on grounds of Health & Safety. In addition, access was denied to the cluster of three ponds (P12-P14) to the east of the Survey Site. The land surrounding these ponds contains Japanese Knotweed *Fallopia japonica* (an invasive species) and is subject to an exclusion and treatment programme which precludes access to third-parties due to the risk of spreading the plant.
- 4.8 Surveys between May 12th and May 22nd were carried out by Stephanie Boocock MCIEEM under the class licence (WML-CL08) with assistance from Caitlin McCann, Owain Waters and Rachel Taylor. For Pond 11, which was identified late during other surveys, the third and fourth visits were carried out by Matthew Hobbs MCIEEM under license number (52219:OTH:SA:2014) with assistance from Rachel Taylor and Gareth Lang. On each visit, weather conditions, including air temperature were recorded. Table 1 gives details of the surveys.

Table 1: Details of GCN surveys. BT= Bottle trapping, TL- torchlight survey, ES= Egg search, N= Netting. Surveyors: SB = Stephanie Boocock, OW= Owain Waters, RT= Rachel Taylor, CMc = Caitlin McCann, MH = Matthew Hobbs, and GL = Gareth Lang.

Visit no.	Date	Surveyors	Survey methods	*Air temp °C		Weather Conditions
				BT	TL/ES	
1	12-13/05/2014	SB + OW	BT, TL, ES	14	8-3	Showers, light wind
2	15-16/05/2014	SB + OW	BT, TL, ES	19	13	No precipitation, light wind
3	19-20/05/2014	SB + RT	BT, TL, ES	18	13	Dry during BT deployment with rain, light wind and thunder during TL/ES
4	22-23/05/2014	SB + CMc	BT, TL, ES	16.3	13	Rain during day, dry and no wind during survey.
3 (for P11)	3-4/06/2014	MH + GL	BT, TL, N	19	14	Light wind, dry.
4 (for P11)	16-17/06/2014	MH + RT	BT, TL, N	21	18	Light wind, dry.

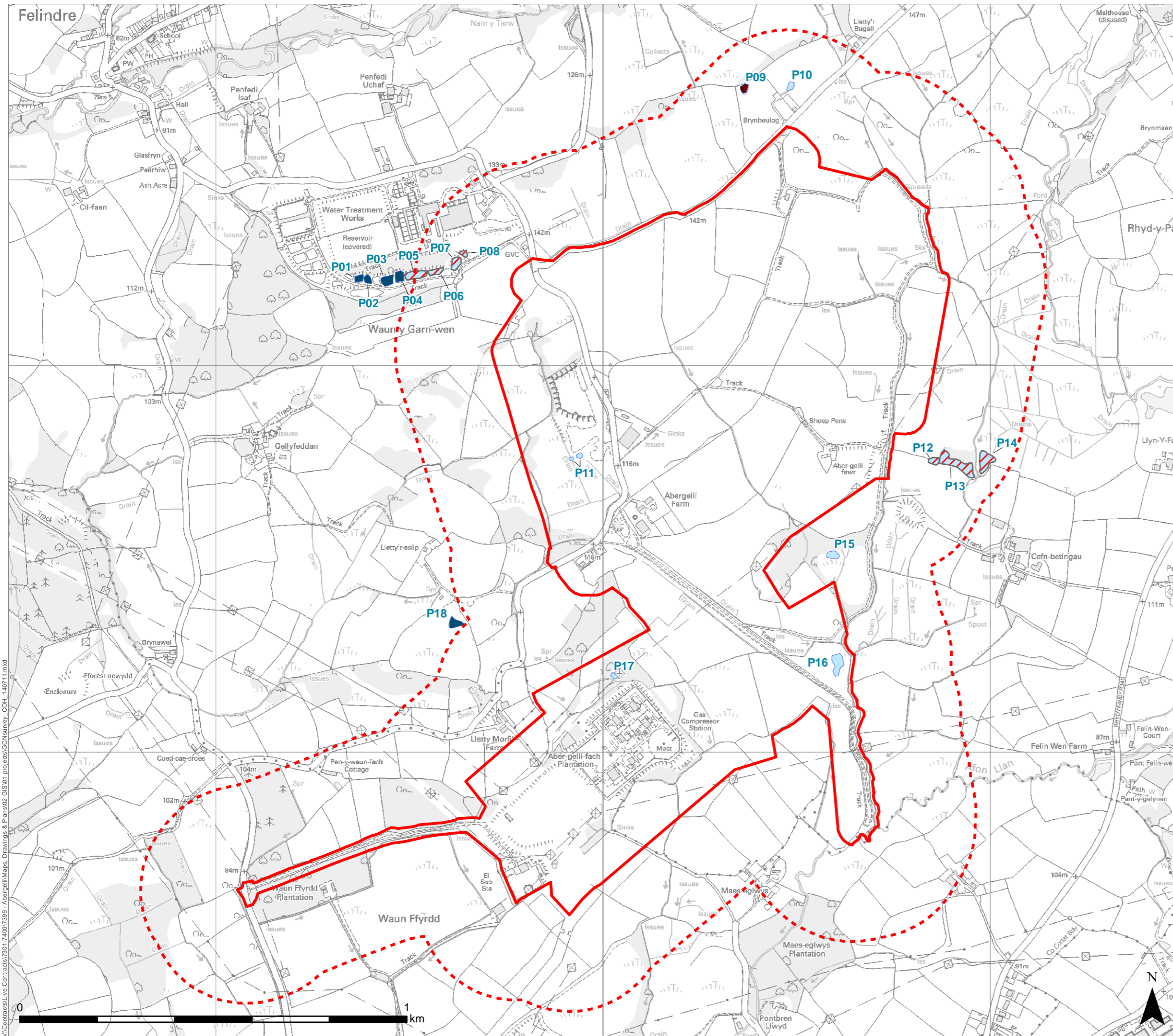
- 4.9 The survey results are summarised in Table 2. Pond P15 dried out between the first and second surveys and only one survey visit to this pond was possible.
- 4.10 The likely absence of GCNs was established for all five ponds surveyed in 2014 the four presence / absence surveys. Additional surveys to make a population size class assessment were not required (following Natural England 2001).

Table 2: GCN survey results. Key: Tc = GCN; Lv = smooth newt; Lh = palmate newt; Lv/Lh = smooth or palmate newt; juv = juvenile; ♂ = male; ♀ = female.

Pond and Date of Survey	Bottle Trap				Torchlight				Egg Search			Netting			
	Tc	Lv	Lh	Lv/Lh	Tc	Lv	Lh	Lv/Lh	Tc	Lv/Lh		Tc	Lv	Lh	Lv/Lh
P10															
12-13/05/2014															
15-16/05/2014															
19-20/05/2014										P					
22-23/05/2014															
P11															
19-20/05/2014			4♂ 3♀					4							
22-23/05/2014			1♀				2♂	5							
3-4/06-2014			1♂					1♀						2♂	4juv , 4eft
16-17/06/2014							1♂	13♂						1♂, 2♂	
P15															
12-13/05/2014															
15-16/05/2014		Dried													
19-20/05/2014		Dried													
22-23/05/2014		Dried													
P16															
12-13/05/2014			2♂				2♂	12♀							
15-16/05/2014							2♂, 2♀								
19-20/05/2014			1♀				4♂								
22-23/05/2014			5♀, 10♂				3♂	1							
P17															
12-13/05/2014							4♂	3♀							
15-16/05/2014							6♂, 2♀								
19-20/05/2014			5♂ 2♀				4♂ 1♀								
22-23/05/2014			1♂ 2♀				2♂ 1♀	1							

Appendix 1: Figures

(overleaf)



LEGEND

- Survey Site boundary
- 250m buffer from Survey Site

Great crested newts

- Pond within 250m of Survey Site that have been surveyed for GCN
- Ponds within 250m of the Survey Site for which access was denied
- Ponds within 250m of the Survey Site that are unsuitable for amphibians
- Ponds within 250-500m of the Survey Site

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PROJECT TITLE
ABERGELLI POWER PLANT

DRAWING TITLE
Figure 1: Great Crested Newt Survey Map

DATE: 11.07.2014 CHECKED: MH SCALE: 1:9,500
 DRAWN: COH APPROVED: MH STATUS: FINAL

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No dimensions are to be scaled from this drawing.
 All dimensions are to be checked on site.
 Area measurements for indicative purposes only.

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Sources: BSG Ecology survey data, Ordnance Survey

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Appendix 2: Photographs of Ponds

Photo 1: Pond P08.



Photo 2: Pond P07.



Photo 3: Pond P10.



Photo 4: Pond P09.



Photo 5: Pond P11.



Photo 6: Pond P15.



Photo 7: Pond P16.



Photo 8: Pond P17



Appendix 3: HSI results.

Pond ref.	Location	Pond Area m ²	Pond permanence	Water Quality	Pond Shading %	No. of waterfowl	Occurrence of fish	Pond density	Proportion of newt friendly habitat around pond within 500 m – Any Barriers	Macrophyte content (est. % total of emergent and submerged macrophytes)	Notes
P07	SN6464602272	150	Never dries	Good	30	Minimal	Possible	Y	Good	0	Not well vegetated
P08	SN6463502258	240	Never dries	Good	10	Minimal	Possible	Y	Good	30	Typha and rushes around edge. Close access not possible
P09	SN6535602709	20	Annual dries	Moderate	30	Absent	No	Y	Good	0	Very shallow and unlikely to fill up – probably mostly dry
P10	SN6548702727	70	Sometimes dries	Good	5	Minimal	Possible	Y	Good	20	Small and shallow
P11	SN6494401748		Never dries	Good		Minimal	Possible	Y	Good	35	Very well vegetated
P16	SN6558701536	25	Sometimes	Good	60	Absent	No	Y	Good	40	
P17	SN6569801237	100	Annually dries	Good	80	Absent	No	Y	Good	100	Water shallow and covered in Carex species. To south consists of patches of standing water within Molinia
P18	SN6503101199	50	Never dries	Moderate	100	Absent	No	Y	Moderate	0	Small pond within woodland – water dark and no aquatic

												vegetation in evidence
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