

Appendix 8.14

Otter and Water Vole Survey Report 2014

**Abergelli**

Abergelli Power Project

Otter and Water Vole Survey Report

BLANK PAGE

## Issuing office

Wyastone Business Park | Wyastone Leys | Monmouth | NP25 3SR  
 T: 01600 891576 | W: www.bsg-ecology.com | E: info@bsg-ecology.com

<b>Client</b>	Stag Energy
<b>Job</b>	Abergelli Power Project
<b>Report title</b>	Otter and Water Vole Survey Report
<b>Draft version/final</b>	FINAL
<b>File reference</b>	7399_R_Otter+water vole_APPR(3)_01102014.docx

	<b>Name</b>	<b>Position</b>	<b>Date</b>
<b>Originated</b>	Rachel Taylor	Ecologist	21 July 2014
<b>Reviewed</b>	Jim Gillespie	Partner	22 July 2014
<b>Approved for issue to client</b>	Matt Hobbs	Principal Ecologist	24 July 2014
<b>Issued to client</b>	Matt Hobbs	Principal Ecologist	24 July 2014
<b>2nd issue to client</b>	Matt Hobbs	Principal Ecologist	12 August 2014

## Disclaimer

This report is issued to the client for their sole use and for the intended purpose as stated in the agreement between the client and BSG Ecology under which this work was completed, or else as set out within this report. This report may not be relied upon by any other party without the express written agreement of BSG Ecology. The use of this report by unauthorised third parties is at their own risk and BSG Ecology accepts no duty of care to any such third party.

BSG Ecology has exercised due care in preparing this report. It has not, unless specifically stated, independently verified information provided by others. No other warranty, express or implied, is made in relation to the content of this report and BSG Ecology assumes no liability for any loss resulting from errors, omissions or misrepresentation made by others.

Any recommendation, opinion or finding stated in this report is based on circumstances and facts as they existed at the time that BSG Ecology performed the work.

Nothing in this report constitutes legal opinion. If legal opinion is required the advice of a qualified legal professional should be secured.

**Contents**

1 Summary ..... 2

2 Introduction ..... 3

3 Methods ..... 4

4 Results ..... 6

Appendix 1: Figure 1 ..... 8

Appendix 2: Target Notes (TN) ..... 9

Appendix 3: Photographs showing characteristics of water courses within Survey Site ..... 11

## 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 The preliminary ecological appraisal<sup>1</sup> identified records of otter *Lutra lutra* and water vole *Arvicola amphibius* within 2 km of the Project Site boundary, and suitable habitat to support these species within the Project Site boundary at the time of the survey (hereafter referred to as the 'Survey Site'). APL commissioned BSG Ecology to undertake an otter and water vole survey of streams and wet ditches within the 150 ha of pastoral farmland at and around Abergelli Farm in June 2014 within the Survey Site, to inform and support an application for Development Consent for the Project.
- 1.3 All accessible ponds, streams and wet ditches within the Survey Site boundary were surveyed for field signs of use by otter and water vole.
- 1.4 There are water courses on Survey Site that could provide resting places and commuting routes for otter. A single fresh spraint was recorded during the survey. This was observed on a rock in the stream that runs along the eastern boundary of the Survey Site.
- 1.5 Holes, that were likely to be mammal burrows, were observed at six points along two streams within the Survey Site. The holes have the right dimensions to allow use by water voles, but did not show signs of current occupation. No latrines, footprints or grazing lawns were observed during the survey.

---

<sup>1</sup> BSG Ecology (2014). Abergelli Power Project: Preliminary Ecological Appraisal.

## 2 Introduction

- 2.1 Abergelli Power Limited commissioned BSG Ecology to undertake an otter and water vole survey in May/June 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, 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.
- 2.4 There are a number of water courses within the Survey Site as described below:
- A stream corridor with small tributaries fed by springs and surface runoff along the eastern boundary of the Survey Site, which feeds into the River Llan to the south.
  - A wooded stream runs along the north western boundary.
  - Several small streams and wet ditches run through the woodland surrounding the Felindre Gas Compressor Station and the two National Grid 400 kV electrical substations.
  - Drainage ditches border many of the pasture fields.

### Description of Project

- 2.5 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 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.
- 2.6 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 an otter and water vole survey. 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

- 2.7 The aims of the otter and water vole survey within the Survey Site were to:
- Assess where water courses within the Survey Site have the potential to support otter and water vole.
  - Establish the likely presence/absence of each species and, if present, their distribution throughout the relevant watercourses.

### 3 Methods

#### Desk Study

- 3.1 Existing ecological information for the Survey Site and the surrounding area was requested from the South East Wales Biodiversity Records Centre (SEWBRc). Information on European and nationally protected<sup>2</sup> species, including otter and water vole, was requested covering the Survey Site and land up to 2 km from the Survey Site boundary. In addition, on-line mapping and aerial photography of the area was also reviewed in May 2014 to identify watercourses that might be present within the Survey Site.

#### Scoping Survey

- 3.2 A Phase 1 habitat survey was carried out by BSG Ecology in February 2014 and updated in April and July 2014<sup>3</sup>. During the Phase 1 habitat survey it was noted that a number of watercourses within the Survey Site had the potential to support otter and water vole, although no field signs were observed. The ponds within the Survey Site were also assessed at this time, and no field signs of otter or water vole were noted.

#### Field Survey

- 3.3 The otter and water vole survey included two visits to cover water courses within the Survey Site. The first visit covered the north of the Survey Site and was conducted on 20 May 2014 by Anna Gundrey MCIEEM and Rachel Taylor ACIEEM. The second visit covered the south of the Survey Site and was conducted on 26 June 2014 by Rachel Taylor ACIEEM and Caitlin McCann. All accessible water courses were inspected for field signs of otter and water vole. In addition, Rachel Taylor ACIEEM and Caitlin McCann surveyed the ponds within the Survey Site while undertaking great crested newt *Triturus cristatus* presence/absence surveys in May 2014<sup>4</sup>.

#### Otter

- 3.4 The otter survey was carried out on all accessible water courses within the Survey Site. Survey methods followed those recommended in Chanin (2003)<sup>5</sup>.
- 3.5 The water courses, including the channel and banks, were systematically surveyed for signs of otter such as droppings ('spraints'), runs and footprints. All areas that were accessible were surveyed, and particular attention was given to suitable sprainting areas such as large, flat rocks or areas where otters were likely to leave the water course. Otter spraint can be distinguished from other mammal droppings, such as mink, by its distinctive musky smell and the presence of fish bones. Mink scats tend to be twisted in appearance and are smaller.
- 3.6 Signs of, or potential for, permanent dwellings ('holts') or resting places for otters were also recorded. Holts and resting places include structures such as cavities in roots of bank side trees, piles of logs or flood debris, drains and caves. Otters can also use resting places above ground in reed beds and dense scrub such as bramble *Rubus fruticosus* and blackthorn *Prunus spinosa*.

#### Water Vole

- 3.7 All water courses that were accessible were surveyed within the optimal period for finding water vole (late April to early October). This is in line with survey standards set out in The Water Vole Conservation Handbook<sup>6</sup>. The water courses, including the channel and banks, were

<sup>2</sup> Wildlife and Countryside Act 1981 Schedules 1, 5 & 8; Conservation of Habitats and Species Regulations 2010; Protection of Badgers Act.

<sup>3</sup> BSG Ecology (2014). Abergelli Power Project: Preliminary Ecological Appraisal.

<sup>4</sup> BSG Ecology (2014). Abergelli Power Project: Great Crested Newt Survey Report

<sup>5</sup> Chanin P (2003). *Monitoring the Otter* Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough.

<sup>6</sup> Strachan, R. & Moorhouse, T. (2006) Water Vole Conservation Handbook 2<sup>nd</sup> Ed. WildCRU, Oxford.



systematically surveyed for signs of water vole such as latrines (a communal area of droppings), feeding stations and grazed lawns, burrows (wider than high, diameter 4-8 cm), runs and footprints.

- 3.8 In addition, an assessment was made of whether individual water courses have potential to support water vole. The Water Vole Conservation Handbook describes favourable water vole habitat as having: wide swathes of riparian vegetation to provide both food and shelter; easily penetrable earth banks; and slow flowing, relatively deep (over 1 m) slow flowing water courses. Factors such as shallow water or over-shading by trees are generally unfavourable to water voles.

#### ***Classification of Areas Surveyed for Otter and Water Vole***

- 3.9 Target notes (TN) were used to describe the characteristics of the water courses surveyed and to record any field signs that were observed. These were mapped (Figure 1, Appendix 1) and the target notes included (Appendix 2). In order to further illustrate the findings of the survey, the streams and ditches were categorised as follows:
- 3.10 **Habitat considered unsuitable for use by otter/water vole** – water courses with some or all of the following characteristics: no/low water levels; shaded; little vegetation; poached banks; no suitable resting places; no field signs of otter or water vole.
- 3.11 **Habitat considered suitable for use by otter/water vole** – water courses with some or all of the following characteristics: permanent flow of water; vegetation on banks; minimal shading; suitable resting places present; signs of otter/water vole.
- 3.12 Photographs are included showing the characteristics of water courses within the Survey Site (Appendix 3).

## 4 Results

### Otter

#### *Desk Study*

- 4.1 SEWBRc provided 32 records of otter within the 2 km search radius, all recorded between 1991 and 2013. The closest record to the Survey Site is 0.5 km to the south west of the River Llan. At its closest point the River Llan is approximately 0.3 km south of the southern Survey Site boundary, within the same surface water catchment, and it links to the Survey Site via the stream running through the woodland in the centre of the Survey Site.

#### *Field Survey*

- 4.2 A single fresh otter spraint was found in the stream that runs along the eastern boundary of the Survey Site (see TN3, Figure 1, Appendix 1; and Appendix 2). At this point the stream is approximately 15 cm deep and with a bed of mud, gravel and rocks, the eastern bank is approximately 2 m high and sheer with over hanging trees. The western bank has an approximately 45 degree grass slope and is approximately 1.5 m high.
- 4.3 No other signs were observed that confirm otter presence in the other water courses within the Survey Site.
- 4.4 The stream that runs along the eastern boundary of the Survey Site also had deep overhangs created by the root system of the mature hedge and trees on the east bank. These have potential to be used as resting places by otter (see Figure 1, Appendix 1). However, foraging opportunities for otters are likely to be limited due to the low water levels (20-30 cm), which would make the watercourse less suitable for fish, and therefore foraging otters.

### Water Vole

#### *Desk Study*

- 4.5 SEWBRc provided three records of water vole, within a 2 km search radius. These records were from the River Llan approximately 1.9 km from the Survey Site boundary, all from 1996. This River is in the same surface water catchment as watercourses present in the Survey Site, so it is possible that water voles could move along water courses that are linked to the River Llan (see section 4.1 above).

#### *Field Survey*

- 4.6 During the surveys many of the ditches that had contained water during the first Phase 1 habitat survey (in February after a very wet winter) had completely dried out by the time of the otter and water vole surveys in May and June 2014. The remaining water courses were fast running and shallow. The banks of the streams were often over-shaded with encroaching bramble and gorse or had steep, bare banks.
- 4.7 No field signs were observed during the surveys that clearly establish the presence of water vole. Some burrows were noted that had dimensions suitable for use by water vole and/or bank vole *Myodes glareolus* and rats, but did not exhibit signs of current use (see TNs 1, 2, 4, 5 and 7). However, no associated latrines, footprints or grazing lawns were observed at any of these locations, Figure 1, Appendix 1; Appendix 2). There was also no evidence of associated burrows below the water line, which is typical of water vole burrows. The holes were therefore considered unlikely to be used by water vole and are more likely to have been created by another species of small mammal, such as bank vole *Myodes glareolus*, or been created by water vole but subsequently abandoned.

- 4.8 No water vole field signs were observed at the ponds within the Survey Site during the great crested newt presence/absence surveys in May 2014<sup>7</sup>.

#### **Incidental Sightings**

In addition to signs of otter and water vole presence recorded during the survey, some signs of badger activity were also noted and are included here for completeness. A single hole badger sett was found at TN9, with digging and a fresh latrine recorded at TN8.

#### **Limitations of Study**

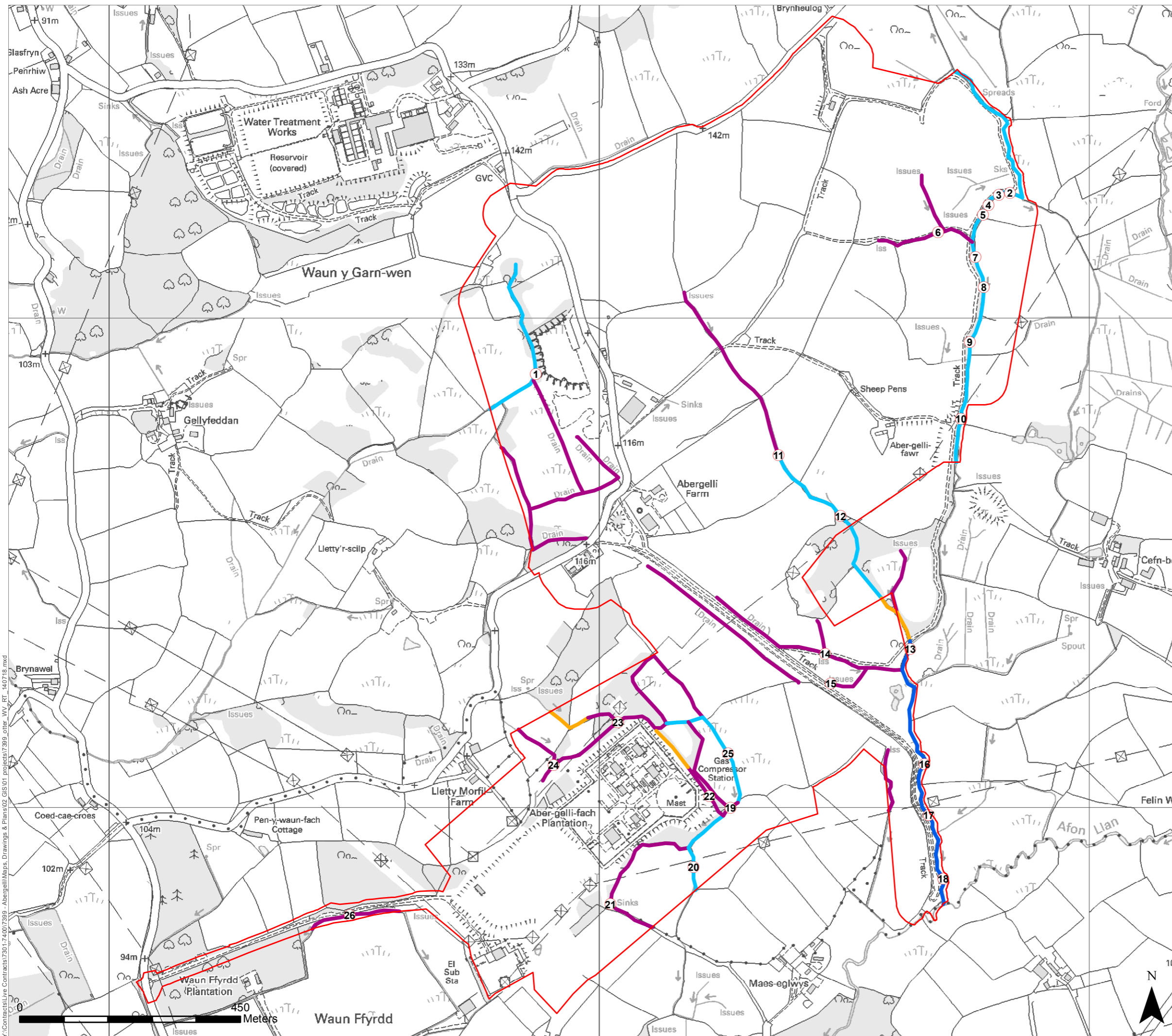
- 4.9 Some of the southern stretch of the stream along the eastern boundary of the Survey Site had extensive bramble and scrub along the banks, with low over-hanging branches and debris in the stream itself. This impeded the view of the surveyors along this stretch. However, a large stretch of the northern section of the same stream was also surveyed without issue, and therefore this limitation should not affect the overall results of the survey. Areas that were inaccessible, or for which the visibility was limited due to extensive scrub, are also indicated on the map (Figure 1, Appendix 1).

---

<sup>7</sup> BSG Ecology (2014). Abergelli Power Project: Great Crested Newt Survey Report.

## **Appendix 1: Figure 1**

(see overleaf)



**LEGEND**

- Survey Site boundary
- Target notes

**Classification of areas surveyed for otter and water vole**

- Habitat considered unsuitable for use by otter / water vole
- Habitat considered suitable for use by otter / water vole
- Habitat considered suitable for use by otter but survey constrained by dense vegetation
- Inaccessible

**BSG** | ecology

OFFICE: Monmouth  
T: 01600 891576

JOB REF: 7399.00

PROJECT TITLE  
**ABERGELLI POWER PLANT**

DRAWING TITLE  
**Figure 1 - Otter and Water Vole Survey**

DATE: 11.08.2014

CHECKED: MH

SCALE: 1:7,500

DRAWN: RT

APPROVED: JG

STATUS: Final

Copyright © BSG Ecology

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

This drawing may contain: Ordnance Survey material by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright 2012. All rights reserved. Reference number 10048980

OS Open data © Crown copyright and database right 2012 | Aerial Photography © Bing Maps

## Appendix 2: Target Notes (TN)

**Stream at TN1** - The stream is wooded, mostly shaded with shallow bramble covered banks. The stream bed is stony, water fast moving and shallow. This provides a sheltered corridor through which otter may commute, but no obvious resting places or signs of otter use were observed.

1. At TN 1 there is a vertical 1m high bare mud bank on the western side of the stream. The stream is approximately 10 cm deep at this point. There is a hole 1 m above the water which had dimensions suitable for use by water vole and/or bank vole/rat. No other field signs were observed.

To the south of TN1 is a marshy field with a network of ditches - At the time of survey (May) these ditches were dry or contained very little water and had steep banks with very little or no vegetation.

**Stream at TN2 to TN10** – The stream is relatively unshaded, with a bed of mud, gravel and rocks. The water depth ranges from approximately 10 cm to 20 cm where pools form. It is fast flowing and appears clean. The eastern bank is approximately 2 m high and sheer. It is topped by a mature hedge the root system of which form a number of deep overhangs by the side of the stream. The west bank has an approximately 45 degree grassed slope.

2. A hole was found in the vertical east bank, approximately 20 cm above the waterline, which had dimensions suitable for use by water vole and/or bank vole/rat. No other field signs were observed.
3. A fresh otter spraint was found on a large, flat stone in the middle of the stream.
4. A pair of holes was found in the east bank approximately 1.5 m from the water line, which had dimensions suitable for use by water vole and/or bank vole/rat. No other field signs were observed.
5. A possible otter resting place on east bank. No otter field signs were observed. A 15 cm diameter hole was found leading into a cavity under the tree root bole, approximately 2 m above the water line. Approximately 3 m to the south of this there are three further holes, 1 m above the waterline on the eastern bank with dimensions that would allow use by water vole and/or bank vole/rat. No water vole field signs were observed.
6. Tributary of the main stream, this is a narrow brook that has dried out at its northern end. It is over shaded by scrub, no field signs for otter or water vole were observed.
7. There is a particularly deep over-hang in the east bank under a root bole. Basal rocks are moss free on top suggesting that it may be regularly accessed; however no field signs of otter were observed. This has good potential as a resting place for otter. On the west bank, above a culvert pipe that runs into the stream from the brook at TN6 there are two holes with dimensions that would allow use by water vole and/or bank vole/rat. No other field signs of water vole were observed.
8. A deep cavity in the eastern bank along the waterline good provides a potential resting place for otter. No otter field signs were observed. On the top of the west bank opposite the cavity are a number of fresh patches of badger digging and a fresh badger latrine.
9. A hole was found in the east bank 2 m above the water line; dimensions suggest that this is a badger sett. There is a mammal run into the field to the east.
10. The stream becomes very shaded at this point, and the eastern bank is largely undercut providing several potential resting places for otter. No field signs were observed.

**Damp ditch/brook at TN11 to TN12** – to the north of TN11 this is a dry to damp ditch that has mainly bare banks, with some areas over-grown by bramble. It is open to horses and sheep and the land around the ditch is poached. No signs of otter or water vole were observed and this section is considered unsuitable for use by either species. To the south of TN11 the amount of water in the ditch gradually becomes greater until it forms a narrow brook, approximately 10 cm in depth.

11. The brook is very over-grown with gorse and bramble, the banks are approximately 1 m high and the water is quick moving and shallow. There is a fenced culvert 10 m to the north which is partially blocked by debris from a fallen tree on the eastern bank. No field signs of otter or water vole were observed.
12. The brook is shallow and fast moving with low grassy banks, over grown by bramble and nettle in large sections. No signs of otter or water vole were observed. South of this location the stream runs through woodland and connects to the stream along the eastern boundary of the Survey Site.

**Stream at TN13 to TN18** – The southern section of the stream previously described in TN2 to TN10. The banks are lined with trees and a scrub understorey of predominantly bramble, the stream is approximately 10 cm – 20 cm deep with a rocky bed. The bank is approximately 1 – 2 m high and undercut in places. The extensive scrub impeded the surveyors' ability to access the stream, however the length was walked and notes made when a good view was available.

13. The stream is narrow, with a bare bank approximately 1 m on each side. It is encroached by bramble and gorse and is largely over shaded. No signs of otter or water vole were observed.
14. A shallow ditch extending north-west of the stream, it is dry at the northern end, the banks are low and poached by horses. The south end contains a small amount of slow moving water and is overgrown with bramble.
15. A similar ditch to TN14, this is dry to the north and the banks are poached by horses. No signs of otter or water vole were observed.
16. The stream is wide, and fast moving, approximately 10 cm in depth. The banks are approximately 1 m high and covered by bramble. There is some undercutting of the bank, although not deep enough to provide resting opportunities for otter. No signs of otter or water vole were observed.
17. The stream is narrow and fast moving, approximately 15cm deep, banks are steep and bare topped with bramble. No signs of otter or water vole were observed.
18. The stream is wide and fast flowing, approximately 20 cm deep. Root boles of trees along the western bank provide resting opportunities for otter. The eastern bank is low with a stone beach where the stream bends. No signs were observed however access was limited due to bramble and a fence on the western bank.

**Ditches and stream at TN19 to TN21** – ditches run along the edge of sheep pasture, most of these are dry with bare banks. A small brook runs from the edge of the woodland through the pasture and extends south outside of the site boundary.

19. This is a dry sheep poached ditch. No signs of otter or water vole were observed.
20. A shallow brook, approximately 10cm in depth with a 50cm high grassy bank to the west and trees along the eastern bank. There are fox runs along the western side. No signs of otter or water vole were observed.
21. A nearly dry ditch, small trickle of water runs over a muddy bed. The banks are low and bare, the ditch is over shaded by trees which line each side. No signs of otter or water vole were observed.

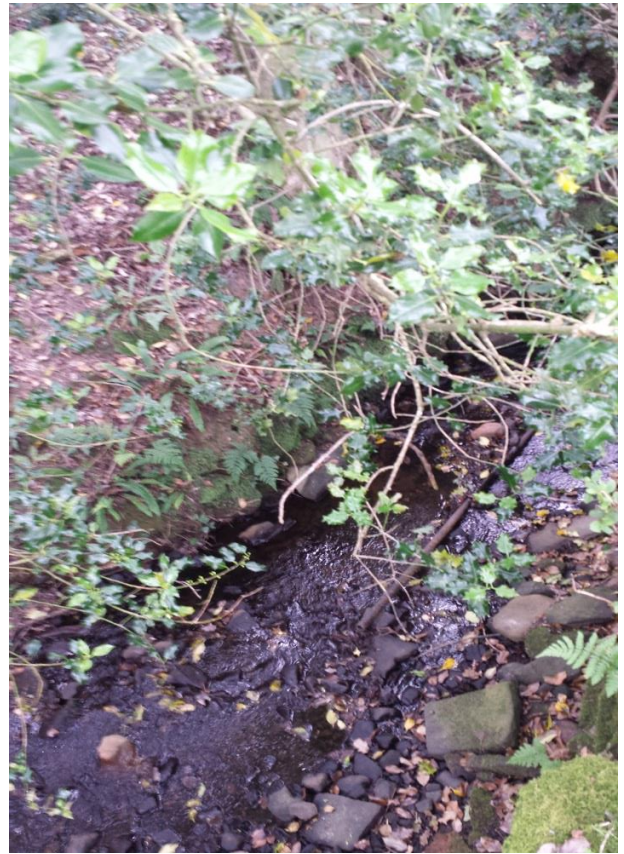
**Water courses in and around wet woodland and National Grid land at TN22 to TN26** – There are shallow ditches along the edges of the woodland, with small streams running in the interior of the woodland. The streams are approximately 10 cm deep, containing leaf litter and debris. The banks are steep with little vegetation other than nettle.

22. Very narrow, over-shaded stream with fast moving, shallow water. There is bramble encroaching on both banks. No signs of otter or water vole were observed.
23. Slow flowing woodland ditch with little water, and a large amount of leaf litter and debris. The banks are low with no vegetation. No signs of otter or water vole were observed. The ditch to the north of this point becomes inaccessible.
24. Similar to the ditch at TN23 this ditch is shallow with slow moving water and completely over shaded by the woodland, with large amounts of leaf litter. No otter or water vole signs were observed.
25. Small stream along the east edge of the field to the east of the Felindre Gas Compressor Station. Fast flowing, shallow (15 cm) with gravel and rock bed. Wide mammal run down to the stream at this point, though to be used by the sheep resident in the field. No signs of otter or water vole were observed.
26. A dry ditch at the time of survey, shaded by trees and full of leaf litter.

### Appendix 3: Photographs showing characteristics of water courses within Survey Site



**Photograph 1** : Damp ditch in field to the south of TN1



**Photo 2**: Stream along eastern boundary (TN10)



**Photo 3**: Dry/overgrown ditch north of TN11, arrow indicates ditch.



**Photo 4**: Stream south of TN12.





**Photo 5:** Ditch running from a field boundary into the woodland surrounding the Gas Compressor Station.



**Photograph 6:** Ditch in woodland north of TN 22 (taken February 2014)