

Appendix 8.10

Otter and Water Vole Survey Report

# Abergelli Power Project Otter and Water Vole Survey Report

Abergelli Power Limited  
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# 1. Otter and Water Vole Survey Report

## 1.1 Introduction

- 1.1.1 AECOM was commissioned to undertake a suite of ecological survey work to inform the Abergelli Power Project (the “Project”).
- 1.1.2 The Project Site is located near to the village of Felindre, Swansea, as shown in Figure 1.1, and the central grid reference for the Site is SN 6528 0143. A full description of the Project is provided in Chapter 3: Project and Site Description of the Environmental Statement.
- 1.1.3 The Preliminary Ecological Appraisal Report (AECOM, 2017) identified that surveys for otter *Lutra lutra* and water vole *Arvicola amphibius* were required at the Project Site.
- 1.1.4 This baseline report outlines the presence of otter and water vole within the otter and water vole survey area and outlines initial recommendations for further surveys, mitigation and enhancement.
- 1.1.5 The otter and water vole survey area encompasses all suitable and accessible watercourses within the Project Site boundary and within a 100 m radius from the Project Site boundary, as shown on Figure 1.1.
- 1.1.6 Previous surveys have been undertaken by BSG Ecology and supported the 2014 PEIR Ecology Chapter which are presented in the PEIR Appendix 8.14.

### a) Objectives of the Survey

- 1.1.7 The objectives of this survey were:
- To identify any designated nature conservation sites within or in the vicinity of the Project Site boundary that have the potential to support otter and water vole;
  - To identify any known records and/or populations of otter or water vole in the vicinity of the Project Site boundary;
  - To record and map evidence of otter and water vole;
  - To make an initial ecological assessment of the Project Site boundary in respect to otter and water vole;
  - To highlight any initial potential ecological constraints in respect to otter and water vole;
  - To outline further survey work that may be required; and,
  - To make initial suggestions for mitigation, compensation and enhancement of the natural features identified on the within the Project Site boundary in respect to otter and water vole.

## 1.2 Legislation

### a) Otter Legislation

1.2.1 Otters are a European Protected Species under The Conservation of Habitats and Species Regulations 2010 (as amended), known as the 'Habitats Regulations', making it an offence to:

- deliberately capture, injure or kill an otter;
- deliberately disturb an otter; and
- damage or destroy a breeding site or resting place of an otter.

1.2.2 Disturbance is defined as that which is likely to impair their ability:

- to survive, to breed or reproduce, or to rear or nurture their young, or
- in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- to affect significantly the local distribution or abundance of the species to which they belong.

1.2.3 Under the Wildlife and Countryside Act 1981(as amended) it is illegal to:

- intentionally or recklessly disturb any otter while it is occupying a structure or place which it uses for shelter or protection;
- intentionally or recklessly obstructs access to any structure or place used by an otter for shelter or protection; and,
- sell, offer or expose for sale any otter.

1.2.4 A Natural Resources Wales licence would be required for any works likely to constitute an offence in respect to otters.

## 1.3 Water Vole Legislation

1.3.1 The water vole is listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), for which the following are offences:

- Intentional killing, injuring or taking;
- Intentionally or recklessly damaging/destroying a place of shelter/protection;
- Intentionally or recklessly disturbing an animal in its place of shelter/protection;
- Intentionally or recklessly obstructing access to its place of shelter/protection; and,
- Possession (live or dead, including derivatives), sale and offering for sale.

## 1.4 Quality Assurance

1.4.1 This survey and subsequent report was undertaken in line with AECOM's Integrated Management System (IMS). Our IMS places great emphasis on professionalism, technical excellence, quality, environmental and Health and Safety management. All staff members are committed to establishing and maintaining our certification to the international standards BS EN ISO 9001:2008 and 14001:2004 and BS OHSAS 18001:2007. In addition, our IMS requires careful selection and monitoring of the performance of all sub-consultants and contractors.

1.4.2 All AECOM Ecologists who worked on this Project are members of (at the appropriate level) the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow their code of professional conduct (CIEEM, 2013) when undertaking ecological work.

## 1.5 Methodology

### a) Desk study

1.5.1 The objective of the desk study is to review the existing information available in the public domain concerning species and habitats to identify the following:

- Internationally and nationally designated sites for otter and water vole, up to 2 km from the Site using the Multi Agency Geographic Information for the Countryside (MAGIC) website ([www.magic.gov.uk](http://www.magic.gov.uk));
- Otter and water vole records and records of locally designated sites for otter and water vole up to 2 km from the Site, using the South East Wales Biodiversity Records Centre (SEWBReC);
- The Section 7 list of Principal Importance for Conservation of Biological Diversity in Wales was reviewed for inclusion of otter and water vole; and,
- Aerial photographs and Ordnance Survey (OS) maps were reviewed to identify features of ecological interest surrounding the Site, nearby areas of ecological interest and features connecting these habitats (hedgerows, watercourses, railway lines).

1.5.2 The reports of previous surveys undertaken by BSG Ecology were provided by the client and were reviewed.

### b) Otter Survey

1.5.3 The Phase 1 Habitat map (AECOM, 2017) and OS mapping were used to identify watercourses within the Project Site boundary and within a 100 m radius of the Project Site boundary.

1.5.4 Surveys for otter were conducted by AECOM ecologists on 18 July 2017 under suitable weather conditions. A detailed visual search of the watercourses within the otter survey area was undertaken.

1.5.5 Searches for otter activity were undertaken following guidance provided in Monitoring the otter *Lutra lutra* (Chanin and Smith, 2003). The survey methodology involved recording all evidence of otter activity, which is detailed below.

- Holt entrances – holes characteristically in river banks or under tree roots at river edges.
- Couch – typically an above-ground nest-like structure used as a resting place;
- Footprints – five toes which arch around the front of a large pad. In soft ground claw marks and webs between toes may show. Often seen in sand or soft mud deposits along rivers and under river bridges;
- Otter trails through vegetation – otters use the same routes within their territory to access rivers, so the paths are usually worn leading down the banks to the

river and may have a 'slide' at the end of well-worn mud as they slide into the water;

- Spraint – found in prominent locations adjacent or along a river, for example on tree stumps, large rocks and ledges under bridges. Sometimes otters may build a 'castle' of soft mud or sand along a river to spraint on top of. Spraints are made up of clearly visible fish bones and scales, with some other small bones, fur, feather and insect fragments sometimes present. Fresh spraint is usually black, tarry and sticky. It has a distinctive sweet-musky odour, which is not unpleasant;
- Anal jelly – a jelly-like secretion that smells strongly of otter and can vary in colour from pale brown, greenish to amber; and
- Other signs – for example, occasionally remains of dead otters can be seen on roads.

### c) Water Vole Survey

1.5.6 The Phase 1 Habitat map (AECOM, 2017) and OS mapping were used to identify watercourses within the Project Site boundary and with a 100m radius of the Project Site boundary.

1.5.7 Surveys for water vole were conducted by AECOM ecologists on two separate visits on the 28<sup>th</sup> June 2017 and 29<sup>th</sup> September 2017. This is to allow for variations in habitat suitability across the season and because water voles are increasingly being shown to utilise different areas at different times of year. A detailed visual search of the watercourses within the water vole survey area was undertaken.

1.5.8 The survey methodology used was in accordance with the Water Vole Conservation Handbook (Strachan and Moorhouse, 2011). This consisted of identifying the extent and distribution of water vole through searches of both banks (where possible) of watercourses for field signs indicating recent activity (i.e. feeding stations and latrines), as well as signs of past and potentially present activity (i.e. burrows). Where conditions allowed, a surveyor walked in the watercourse channel to check for field signs along the water's edge.

1.5.9 The survey methodology involved recording all evidence of water vole activity, which is detailed below.

- Faeces – these are 8 – 12mm long and 4 – 5mm wide, with a smooth 'tic tac' like shape, varying in colour from green to black, and odourless with a putty-like texture;
- Latrines – found throughout the territory, often comprising a pile of flattened droppings, with fresh droppings on top, used to mark range boundaries or favoured spots close to burrows;
- Feeding stations – comprise a neat pile of chewed feeding remains, often comprising lengths of vegetation up to 10cm long, showing the marks of the two large incisors;
- Burrows – these are typically wider than they are high, with a diameter of 4 – 8cm, and are usually located along the water's edge;
- Lawns – around burrows there is often an area of grazed vegetation, surrounded by taller vegetation, these are most often produced when the female is nursing young;



- Nests – these comprise a large ball of shredded material, often woven into the bases of rushes and reeds, and are normally found in areas where the water table is high, such as wetlands;
- Footprints – as with other rodents, the footprints of the fore foot, show four toes in a star arrangement, with the hind foot showing five toes. The size of footprints for the hind foot is 26-34mm; and,
- Runways – these are low tunnels within the vegetation, often adjacent to the water’s edge; and

1.5.10 The presence of water vole can also be confirmed by sightings and from the characteristic ‘plop’ of the water vole entering the water, which acts as a warning to other voles.

1.5.11 Latrines are indicators of territorial behaviour, which in turn generally correlates with water vole breeding activity. For the presentation of water vole distribution data, sections of the ditch where latrines were identified would be illustrated as “Breeding Activity”, and sections of the ditch where evidence other than latrines was identified would be illustrated as “Non-Breeding Activity”.

## 1.6 Limitations

1.6.1 Biological records can be received from a wide variety of sources and may or may not be comprehensive and accurate. However, if assessed in conjunction with a survey, they can contribute to a robust ecological assessment of a site.

1.6.2 There was heavy rain the night before the second survey on the 29<sup>th</sup> September 2017 which had the potential to wash away spraint or faeces evidence.

1.6.3 Two watercourses (Afon Llan and a tributary of the Afon Llan) were not accessible at the time of survey due to dense vegetation obscuring the view of the banks, and land access permissions. These watercourses were partially viewed and were assessed as having suitability to support both species. There is potential for signs of both species to have gone unrecorded.

## 1.7 Baseline Environment

### a) Desk Study Results

1.7.1 The designated habitats, sites and features within proximity to the Project Site are listed in Table 1.1 below.

**Table 1.1: Desk Study Results**

Designation / Feature	Description
Nationally and Internationally Designated Sites within 2 km	There are no national or international sites designated for otter or water vole within 2 km of the Project Site boundary.
Locally Designated Sites within 2 km	There are no local sites designated for otter or water vole within 2 km of the Project Site boundary.

Designation / Feature	Description
Otter and water vole Records from the last 10 years within 2 km	There are two records of otter approximately 1km south of the Project Site boundary one located between the Afon Llan and Nant y Gors watercourses and one from the Afon Llan. There are no records of water vole from with 2 km.
Priority Species – Listed on The Environment Act (Wales) 2016 Section 7	Otter and water vole are both listed in the Environment Act (Wales) 2016 Section 7.
Surrounding Land Use	<p>The Site is located to the north of Junction 46 of the M4 Motorway close to the village of Felindre, Swansea.</p> <p>The Site has agricultural fields to the east, south and north. Areas of woodland are located to the south, east and west of the Site. Afon Llan runs adjacent the southern Site boundary. Areas of the National Grid Power Station with associated roads and buildings are partially within and adjacent to the Site boundary. A water treatment works is located in the north-west outside of the Site boundary.</p>
Ponds within 500m	<p>OS mapping shows 25 Ponds within 500m of the Site Boundary, three of these (Ponds 16, 22 and 23) are within the Site boundary:</p> <ul style="list-style-type: none"> <li>• Ponds 1 – 8: Located near to wastewater treatment works approximately 350m west. Connected to the Site via woodland and grassland. Outside of the otter and water vole survey area;</li> <li>• Ponds 9, 10 and 21: Located approximately 350m east and connected to the north-east tip of the road boundary via grassland. Outside of the otter and water vole survey area;</li> <li>• Pond 11: Approximately 210m west of the Site boundary and connected to the Site via grassland and scrub. Outside of the otter and water vole survey area;</li> <li>• Ponds 12 – 14 and 18: Located approximately 450m east and connected to the Site via woodland and grassland. Outside of the otter and water vole survey area;</li> <li>• Pond 15: Located approximately 130m north and connected to the Site via woodland and grassland. Outside of the otter and water vole survey area;</li> <li>• Pond 16: Within the Site boundary, dry during the Phase 1 Habitat Survey. Not suitable for otter or water vole as dry;</li> <li>• Pond 17: Located approximately 200m west and connected to the Site via woodland, grassland and scrub. Outside of the otter and water vole survey area;</li> <li>• Ponds 19a and 19b: Approximately 400m north and connected to the Site via grassland. Outside of the otter and water vole survey area;</li> <li>• Pond 20: Approximately 450m north, connected to the Site</li> </ul>

Designation / Feature	Description
	<p>via grassland. This pond was identified as dry in 2017. Outside of the otter and water vole survey area;</p> <ul style="list-style-type: none"> <li>• Pond 22: Within the Site Boundary. Included within the otter and water vole survey area;</li> <li>• Pond 23: Within the Site Boundary and identified during the Phase 1 Habitat Survey.. Included within the otter and water vole survey area ; and,</li> <li>• Pond 24: Approximately 150m north within the garden of Pen-y-Waun Fach Cottage. The pond is connected to the Site via grassland and woodland. Outside of the otter and water vole survey area.</li> </ul>
Previous Surveys undertaken by BSG Ecology	<p>An otter spraint was identified during the previous surveys (PEIR Appendix 8.14), the location of which is approximately 500m east of the Project Site boundary and the watercourse on which it was found flows through the Project Site.</p> <p>Holes, that were likely to be mammal burrows, were observed. 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 (PEIR Appendix 8.14).</p>

## 1.8 Otter and Water Vole Survey Results

1.8.1 The results of the otter and water vole survey are given in Table 1.2, Table 1.3 and Table 1.4. Figure 1.1 shows the watercourses and ponds surveyed, their suitability to support otter and water vole and the reference numbers listed below as part of the survey notes. Photographs (Plates) referenced, can be found below Table 1.4.

**Table 1.2: Otter and Water Vole Survey Results – Culverts, Mammal Burrows, Mammal Trails, Spraints**

Number	Notes
1	Push under likely used by fox or badger.
2	Culvert.
3	On watercourse 43: burrows; no evidence of current occupancy; could be water vole or brown rat. Water level too high in September to be suitable.
4	Couch-type hole, extends back 0.5m; no worn muddy trail leading to/from entrance, but vegetation is trampled. Plate 1.1.
5	Spraints and a possible otter footprint identified on Pond 19 during the great crested newt surveys in May 2017. Outside of otter survey area. Plate 1.2.

**Table 1.3: Otter and Water Vole Survey Results – Mammal Trails**

Number	Notes
1	Mammal trail, moderately well-used.
2	Mammal trail.

Table 1.4: Otter and Water Vole Survey Results – Watercourse Features

Watercourse Feature	Potential	Notes
1	Unsuitable	Unsuitable for otter, although it has water vole potential (rushes & steep bank) it is completely isolated and was dry during the survey; no fish; overgrown next to photovoltaic farm.
2	Unsuitable	Accessible by livestock and had no banks, and no food sources; low water level (1cm) during the survey, and is likely to dry. Leads to culvert under road. Plate 1.3.
3	Unsuitable	No banks; livestock can access; low water level.
4	Unsuitable	Partially shaded, with no banks; livestock can access; low water level. Section to south fences with heavy bramble and tree cover; steep tall banks; no food sources.
5	Unsuitable	Dry at northern 1/3; heavily shaded; access impeded by bramble; wet for southern 2/3rds but 1 cm – 5 cm deep.
6	Suitable	Suitable for otters only. Steep, shaded banks; unsuitable for water vole; water up to 5cm deep; some commuting potential for otter or couch creation, but limited; no food source.
7	Not accessible	Not accessible, very dense vegetation; steep-sided stream/ravine. Unlikely to be suitable for water vole due to lack of food source.
8	Unsuitable	Very densely vegetated and shallow stream.
9	Not accessible	Unable to survey.
10	Suitable	Suitable for otters only, not water vole; dense vegetation and shaded.
11	Suitable	Suitable for otters only; unsuitable for water vole ; some commuting potential for otter or couch creation, but limited; no food source. Heavily shaded by dense woodland, not always accessible/viewable. Plate 1.4.
12	Suitable	Suitable for otters only. Wooded, heavily shaded; unsuitable for water vole; some commuting potential for otter or couch creation, but limited; no food source.
13	Not accessible	Unable to survey.
14	Suitable	Suitable for otters only. Heavily shaded, dense vegetation - woodland; running water; some commuting potential for otter or couch creation; unsuitable for water vole.
15	Not accessible	Not fully accessible, viewed from west end only. Wide watercourse, deep water. Dense vegetation in some areas; good otter potential for foraging, commute and holt/couch creation. Burrows; no evidence of current occupancy; could

Watercourse Feature	Potential	Notes
		be water vole or brown rat. . Plate 1.5.
16	Unsuitable	Heavily shaded; little/no water; no food sources.
17	Unsuitable	Heavily shaded, shallow and narrow; no food sources.
18	Unsuitable	Heavily shaded, shallow and narrow; no food sources.
19	Unsuitable	Heavily shaded, shallow and narrow; no food sources.
20	Unsuitable	Completely shaded drain.
21	Unsuitable	Almost dry drain.
22	Unsuitable	Heavily shaded, shallow <1cm water, rocky banks; no food sources. Viewed from the National Grid access road.
23	Not accessible	No land access agreement in place.
24	Not accessible	No land access agreement in place.
25	Unsuitable	Heavily shaded and shallow; unsuitable for otter or water vole.
26	Unsuitable	Dry; unsuitable for otter or water vole.
27	Suitable	Suitable for otters only. Low water quality, lots of brown algae; livestock can access; some limited commuting potential for otter- sub-optimal.
28	Suitable	Suitable for otters only. Fenced; wooded and shaded; some commuting potential for otter and couch creation; unsuitable for water vole. Majority not viewable due to woodland.
29	Suitable	Suitable for otter commuting only; unsuitable for water vole.
30	Unsuitable	Shallow ditch.
31	Unsuitable	Heavily shaded ditch.
32	Unsuitable	Dry at the time of survey.
33	Suitable	Soft rush abundant, steep muddy banks; shallow water July (10cm max); no fish; limited water vole potential; otter unlikely.
34	Suitable	Suitable for otters only. Ditch dry in July; wet in September and suitable for occasional commuting otter only.
35	Suitable	Suitable for otters only. Ditch dry in July; wet in September and suitable for occasional commuting otter only.
36	Suitable	Suitable for otters only. Suitable for occasional commuting otter only.
37	Unsuitable	Peat cutting.
38	No watercourse	Dry, no watercourse.

Watercourse Feature	Potential	Notes
39	Unsuitable	Pooling of water into field at western end, no ditch along rest of boundary.
40	Unsuitable	Heavily shaded, shallow water, no food resources.
41	Suitable	Suitable for otters only, unsuitable for water vole; dense vegetation and shaded.
42	Unsuitable	Heavily shaded woodland, unsuitable for water vole; some commuting potential for otter or couch creation, but limited; no food source. No access due to vegetation.
43	Suitable	Wide watercourse, deep water. Dense vegetation in some areas; good otter potential for foraging, commute and holt/couch creation. Burrows; no evidence of current occupancy; could be water vole or brown rat. ; unfenced sheep either side will reduce suitability.
44	Unsuitable	No potential.
45	Suitable	Suitable for otters and water vole in the less shaded areas; wooded and reasonably deep water.
46	Not accessible	Unable to survey.



**Plate 1.1: Photographs of couch-type hole (Feature 1)**





Plate 1.2: Photographs of spraints and a possible otter footprint from May 2015 (Feature 5)





**Plate 1.3: Photographs of Watercourse Feature 2, unsuitable for otter and water vole**





**Plate 1.4: Photographs of Watercourse Feature 11, suitable for otter and unsuitable for water vole**



**Plate 1.5: Photographs of Watercourse Feature 15, suitable for otter and limited suitability for water vole**





## 1.9 Conclusions

### a) Otter

- 1.9.1 A total of thirteen watercourses within the otter survey area were suitable for supporting commuting otter and two watercourses were suitable for supporting foraging otter, holt and couch creation. One potential couch was identified with a trampled vegetation track leading to it which suggested occasional use by a mammal. Two mammal tracks were identified; these may have been fox or another mammal. No spraints, holts, footprints, anal jelly or other signs were identified during the surveys.
- 1.9.2 Due to the confirmed presence of otter upstream from the Project Site in 2015 and the presence of spraints and a footprint from a nearby pond in May 2017 it can be concluded that otters are still active in the locality. As such it is likely that otters use the suitable watercourses (numbers 10, 11, 12, 14, 15, 41, 43 and 45) within the otter survey area and Project Site boundary for occasional foraging, commuting, resting and holt creation (although no evidence of holts was identified during the survey).

### b) Water Vole

- 1.9.3 Four watercourses that had potential for supporting water vole were recorded within the water vole survey area (15, 43, 46 and 48). Two of these (15 and 45) had limited potential for water vole due to the relative isolation of these watercourses within the landscape (i.e. not connected to watercourses with potential to support water vole). However, it should be noted that some watercourses could not be adequately surveyed due to dense vegetation and therefore signs may have been missed. Burrows suitable for water vole were found (watercourses 15 and 43) but there was no evidence of current occupancy. It was therefore not possible to determine if the burrows had been excavated by brown rat or water vole. There were no records of water vole from SEWBReC, and it appears likely that water vole are absent from the water vole survey area.

## 1.10 Recommendations

### a) Recommendations for Further Surveys

- 1.10.1 A full assessment of required further surveys has been made during EclA and reported in the PEIR. At this stage the following recommendations have been made:
- Due to the time that would have elapsed between the otter and water vole survey and the proposed construction start date it is recommended that a pre-construction survey for otters and water voles is undertaken on suitable watercourses to check for activity or any newly created holts or couches, or burrows. The survey will focus on watercourses and water bodies likely to be impacted by the proposed works.

### b) Recommendations for Mitigation

1.10.2 A full series of recommendations for mitigation at construction and operation has been undertaken for the EclA and reported in the PEIR. Further recommendations may be made as a result of the outcome of the pre-construction survey. At this stage the following key recommendations have been made:

- An exclusion area of 100 m will be established around any newly identified otter holts and resting places prior to works commencing and further advice will be sought from Natural Resources Wales.
- An exclusion area of 10 m will be established around any newly identified owater vole burrows prior to works commencing and further advice will be sought from Natural Resources Wales.
- Access to open-water habitats must be safeguarded at all times; effects to newly identified established otter paths and traditional routes between such areas (such as field drains) during the construction phase should be minimised.
- Habitat loss should be compensated – particularly key habitat types for the species.
- A buffer should be in place during construction to prevent pollution and/or run off into the watercourses/water bodies.

c) **Recommendations for Biodiversity Enhancement**

1.10.3 A full series of recommendations for biodiversity enhancement has been made during the EclA and reported in the PEIR. Further recommendations may be made as a result of the outcome of the pre-construction survey. At this stage the following precautionary recommendations have been made:

- Habitat restoration or enhancement works.

## 2. References

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## Figure 1.1 Otter and Water Vole Survey Area and Survey Results



**Project Title:**

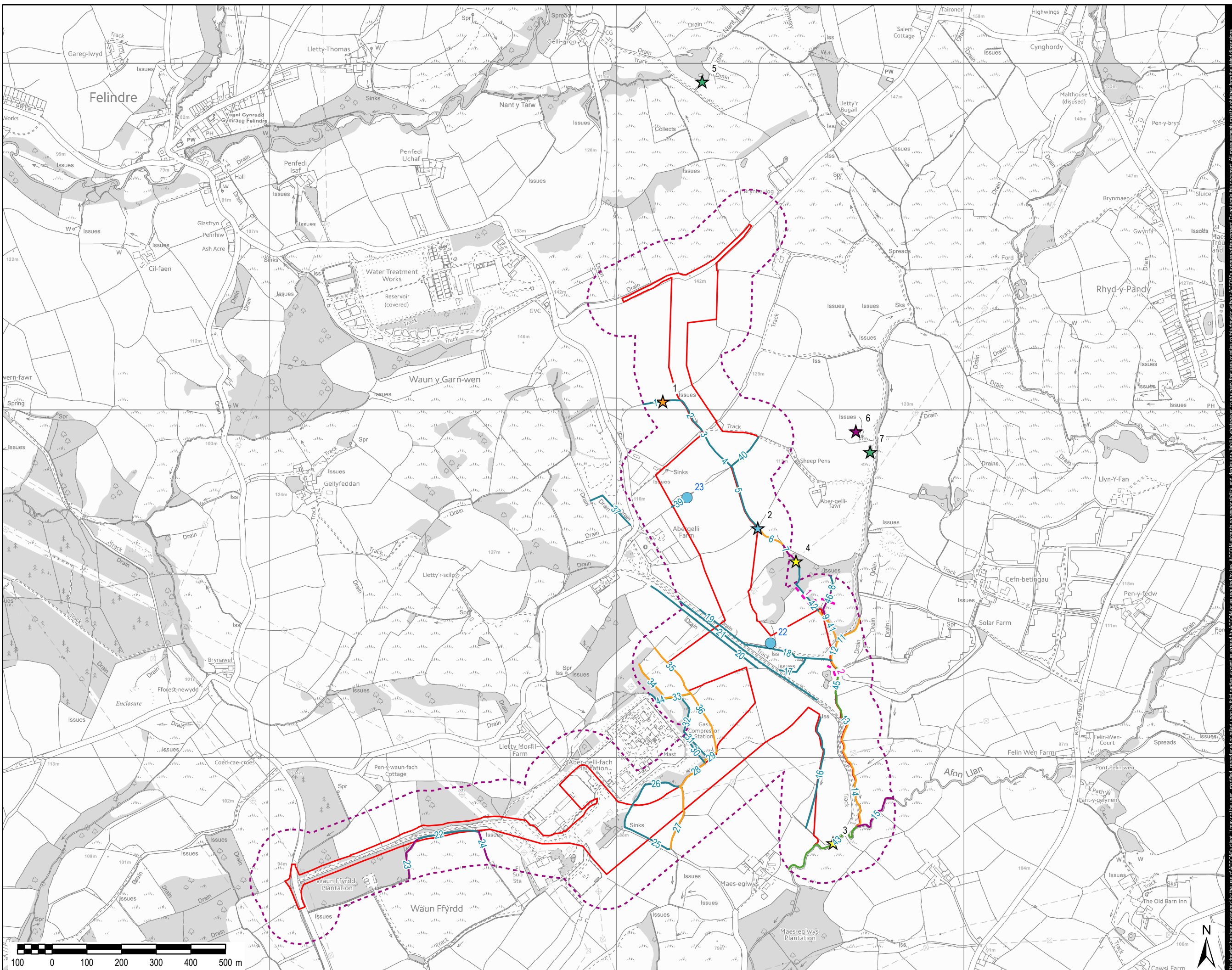
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**LEGEND**

- Ponds
- ★ Culvert
- ★ Mammal Burrow
- ★ Mammal Trail
- ★ Otter Holt/Resting Place
- ★ Sprint
- Not accessible
- Suitable
- Suitable - Otter Only
- Unsuitable
- - - Mammal Trail
- - - Otter and Water Vole Survey Area
- Project Site Boundary



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FIGURE 1 002

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