

## 5 Ecology

### Introduction

- 5.1 This Section of the Screening and Scoping Report details the methodology which will be followed during the terrestrial Ecological Impact Assessment (EclA).
- 5.2 Marine Ecology is discussed separately in Section 17 of the Screening and Scoping Report; the divide between the terrestrial and marine environment is shown on Figure 2.1.

### Legislation and Policy

- 5.3 Legislation and planning policy relevant to the EclA comprises:
- The Conservation of Habitats and Species Regulations 2010 (as amended);
  - The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1979);
  - EC Wild Birds Directive 1979 (European Directive 79/409/EEC on the conservation of wild birds);
  - The Wildlife and Countryside Act 1981 (as amended);
  - The Countryside and Rights of Way Act 2000;
  - Hedgerow Regulations 1997;
  - Natural Environment and Rural Communities Act 2006 (Section 42 superseded by The Environment (Wales) Act 2016);
  - Protection of Badgers Act 1992;
  - The Planning Policy Wales (2016);
  - Technical Advice Note (TAN) 5, Nature Conservation and Planning (2009);
  - The Anglesey and Gwynedd Joint Local Development Plan (2017);
  - Gwynedd Council, Supplementary Planning Guidance: Wildlife Sites (2010), and
  - Eryri Local Development Plan 2007-2022 (adopted by Snowdonia National Park Authority in July 2011).

### Baseline Environment

- 5.4 Establishment of baseline conditions has involved the collation of existing published data, consultation with the local biological record centre, an Extended Phase 1 Habitat Survey and Phase 2 Protect Species Surveys undertaken in 2016 and validated in 2018.

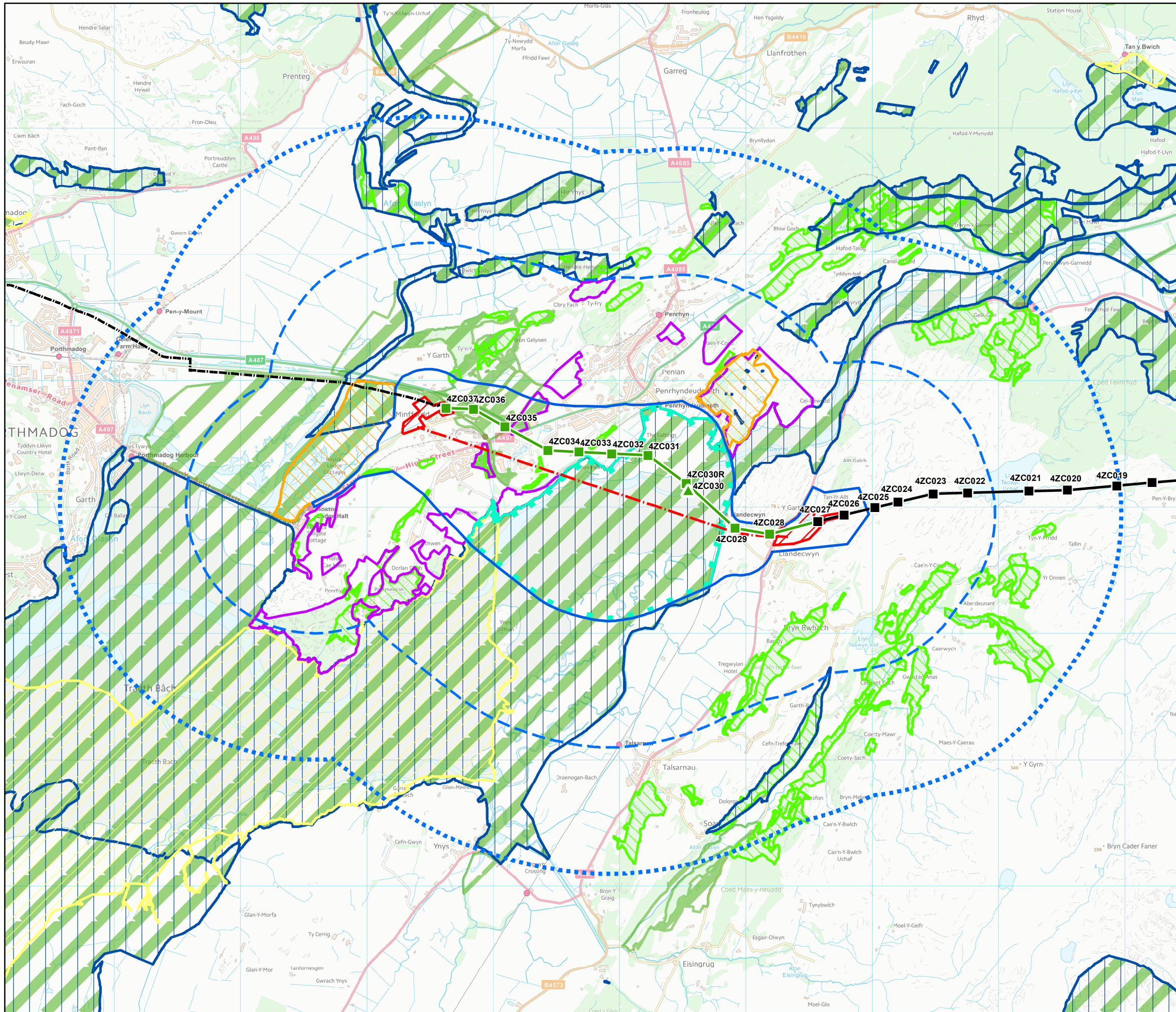
### Desk Study

- 5.5 A desk study was carried out to identify statutory and non-statutory designated sites and records of protected and notable species:
- Statutory designated sites have been identified within a 2km Study Area from the boundary of the Area of Search for Permanent and Temporary Works (see Figure 5.1).

- Non-statutory designated sites have been identified within a 1km Study Area from the boundary of the Area of Search for Permanent and Temporary Works (see Figure 5.1).
  - Biological records have been identified within a 1km Study Area from the boundary of the Area of Search for Permanent and Temporary Works. Only records from within the last 10 years are regarded as reliable and therefore included within this Screening and Scoping Report.
- 5.6 The desk study was carried out in 2015 and repeated in 2018 using data from the following sources:
- Cofnod (North Wales Environmental Information Service);
  - Natural Resources Wales (NRW) website (<https://naturalresources.wales>);
  - Multi-Agency Geographic Information for the Countryside (MAGIC) website (<http://magic.defra.gov.uk>); and,
  - Online aerial photography and mapping (examined to understand the wider habitat context and physical habitat connections).

### Designated Sites

- 5.7 Information from NRW, the MAGIC website and Cofnod identified that there are a number of statutory designated sites within the 2km Study Area including Special Area of Conservation (SAC), National Nature Reserve (NNR) and Sites of Special Scientific Interest (SSSI). The following statutory designated sites fall within the Area of Search for Permanent and Temporary Works (see Figure 5.1):
- Morfa Harlech SSSI/ NNR;
  - Lleyn Peninsula and the Sarnau SAC; and
  - Ysbyty Bron y Garth SSSI.
- 5.8 In addition, the Glaslyn SSSI and Coedydd Derw a Safleoedd Ystlumod Meirion / Meirionnydd Oakwoods and Bat Sites SAC are located on the boundary of the Area of Search for Permanent and Temporary Works.
- 5.9 Information from Cofnod identified that there are a number of non-statutory designated sites within the 1km Study Area including Ancient Woodland, North Wales Wildlife Trust Reserves and Wildlife Sites. The following non-statutory designated sites (which are both considered of local importance for nature conservation) fall within the Area of Search for Permanent and Temporary Works (see Figure 5.1):
- seven areas of Ancient Woodland; and,
  - three Wildlife Sites (Bronygarth Hospital, Abergafren and Cae Conol).
- 5.10 In addition, Gwaith Powdwr North Wales Wildlife Trust Reserve/ Wildlife Site and Coed y Garth Wildlife Site are located on the boundary of the Area of Search for Permanent and Temporary Works.



**Legend**

- Existing National Grid Underground Cable
- Existing National Grid Overhead Line
- Existing National Grid Overhead Line to be Removed
- Area of Search for Permanent and Temporary Works
- 1km Study Area
- 2km Study Area
- Proposed Sealing End Compound/ Tunnel Head House Search Area
- Proposed Tunnel Alignment
- Foundation of Former Pylon 4ZC030 to be Removed
- Existing National Grid Pylon to be Removed
- Existing National Grid Pylon to be Retained
- Marine Environment Area
- North Wales Wildlife Trust Reserve (Source: Cofnod)
- Wildlife Sites (Source: Cofnod)
- Ancient Woodland (Source: NRW)
- Special Areas of Conservation (SAC) - (Source: NRW)
- National Nature Reserves (NNR) - (Source: NRW)
- Sites of Special Scientific Interest (SSSI) - (Source: NRW)

Source:  
 Study Area: P6 (with western extension) NG & RSK  
 Existing Infrastructure - National Grid  
 Marine Environment - NRW

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**Figure 5.1:  
 Statutory and Non-Statutory  
 Designated Sites**

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## Protected and Notable Species

- 5.11 Historical records of protected or otherwise notable species were obtained from Cofnod. A summary of the records obtained are noted where relevant in the sections below.

### Extended Phase 1 Habitat Survey

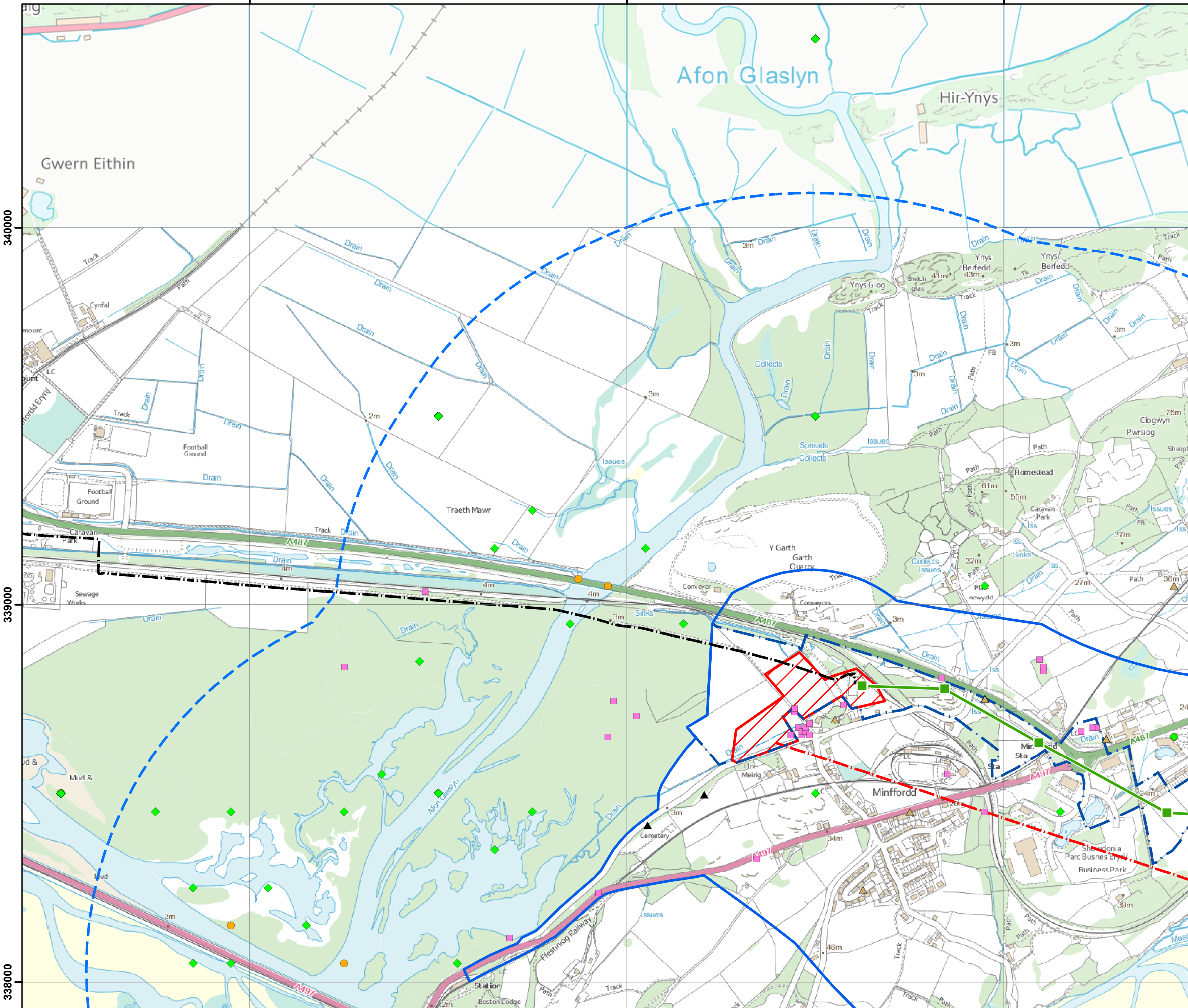
- 5.12 An Extended Phase 1 Habitat Survey has been undertaken following methodology by JNCC, 2010, Guidelines for Baseline Ecological Assessment (Institute of Environmental Assessment, 1995) and the approach recommended in the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2012); the survey also conformed to the British Standard 42020:2013 Biodiversity – Code of practice for planning and development.
- 5.13 The survey was undertaken by suitably qualified ecologists on the 26th- 27th October and 23rd November 2015. Due to the time elapsed, the survey was updated in August 2018.
- 5.14 The Extended Phase 1 Habitat Survey focused on the potential zone of influence i.e. an area encompassing all predicted ecological effects from the Proposed Project, (including all associated temporary works, such as temporary access roads and construction working areas which result in land-take and habitat loss, and those which will occur through disturbance such as noise). The zone of influence has been reviewed throughout the EclA process and revised as appropriate during design progressions and amended if necessary).
- 5.15 The ecological surveys area is shown on Figure 5.2. The ecological survey area will be extended should the ongoing design of the Proposed Project predict the need for further land-take.
- 5.16 The Extended Phase 1 Habitat Survey methodology maps habitat types and features of importance or of significant ecological value. Where ecological features of particular note were present, target notes were marked on a field map and a description of each taken. Plant species were identified for different habitat types. However, these were indicative of habitat, rather than detailed inventories of the species present.
- 5.17 The Extended Phase 1 Habitat Survey involved preliminary investigations into the presence of legally protected species in terms of searching and recording signs of the species or assessing the presence of suitable habitat. Within the Extended Phase 1 Habitat Survey, this included:
- Recording evidence of the presence of invasive weeds listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), including Japanese knotweed;
  - Assessment of habitat potential for reptiles and amphibians;
  - Searching for signs of otters and water voles, including spraints, latrines, footprints and runs;
  - Assessment of suitable habitat for nesting birds;
  - Evaluation of habitats within the survey area and its surrounds for their potential to support other protected species or groups, including terrestrial and aquatic invertebrates;
  - Assessment of any watercourses for their suitability to support white-clawed crayfish and fish such as salmonoids (brown trout) and river lamprey;
  - Assessment of suitable habitats for dormice;
  - Searching for signs of badger activity including setts, tracks, snuffle holes and latrines; and
  - A visual inspection of tree and buildings to assess their suitability for bat roosts.

- 5.18 Field signs, features with potential to support protected species and evidence of their presence were recorded when encountered. If found, a note was made of visible instances of invasive non-native plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).
- 5.19 The following habitats were recorded during the Extended Phase 1 Habitat Survey:
- Saltmarsh;
  - Intertidal mud/sand;
  - Grassland (poor semi-improved, improved);
  - Wetland habitats such as marsh/marshy grassland, swamp;
  - Broad-leaved parkland/scattered trees;
  - Scrub and tree habitats including scattered scrub, some mosaic habitat and mixed parkland;
  - Broadleaved woodland-semi-natural and both broadleaved and coniferous woodland-plantation;
  - Cultivated/disturbed land-amenity grassland;
  - Introduced shrub;
  - Aquatic habitats such as standing and running water;
  - A broad range of hedgerow types including native species-rich;
  - Bracken; and
  - Other less vegetated habitats such as bare ground, inland cliff, quarry, wall, hard standing, buildings.

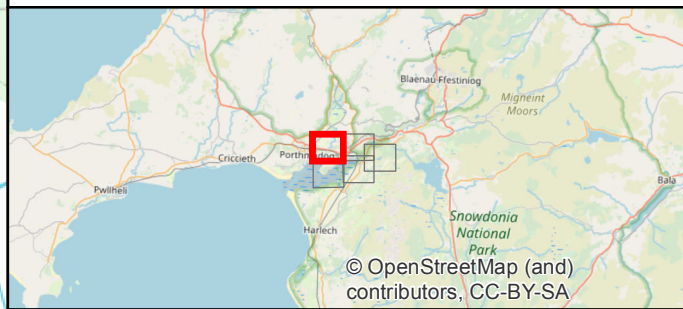
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Overview



Legend

- Area of Search for Permanent and Temporary Works
- 1km Study Area
- Ecological Area of Search
- Existing National Grid Underground Cable
- Overhead Line to be Removed
- Existing National Grid Overhead Line
- Proposed Sealing End Compound/ Tunnel Head House Search Area
- Proposed Tunnel Alignment
- Existing National Grid Pylon to be Removed
- Badger
- Bat
- Otter
- Schedule 1 Bird
- Schedule 9 Plant

Source: Study Area: P6 (with western extension) NG & RSK Existing Infrastructure - National Grid, Marine Environment - NRW, Species Records - Cofnod

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Scheme Name:  
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Document Title:  
**Figure 5.2:  
Protected and Notable Species Records**

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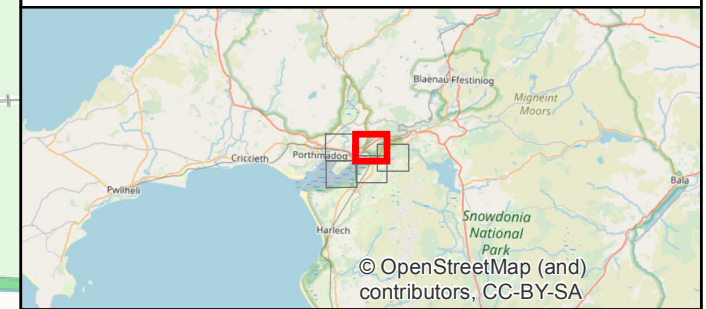


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Overview



Legend

- Area of Search for Permanent and Temporary Works
- 1km Study Area
- Ecological Area of Search
- Overhead Line to be Removed
- Existing National Grid Overhead Line
- Proposed Sealing End Compound/ Tunnel Head House Search Area
- Proposed Tunnel Alignment
- Foundation of Former Pylon 4ZC030 to be Removed
- Existing National Grid Pylon to be Removed
- Existing National Grid Pylon to be Retained
- American Mink
- Badger
- Bat
- Bluebell
- Hedgehog
- Otter
- Polecat
- Reptile
- Schedule 1 Bird
- Schedule 9 Plant
- Toad
- Water Vole

Source: Study Area: P6 (with western extension) NG & RSK Existing Infrastructure - National Grid, Marine Environment - NRW, Species Records - Cofnod

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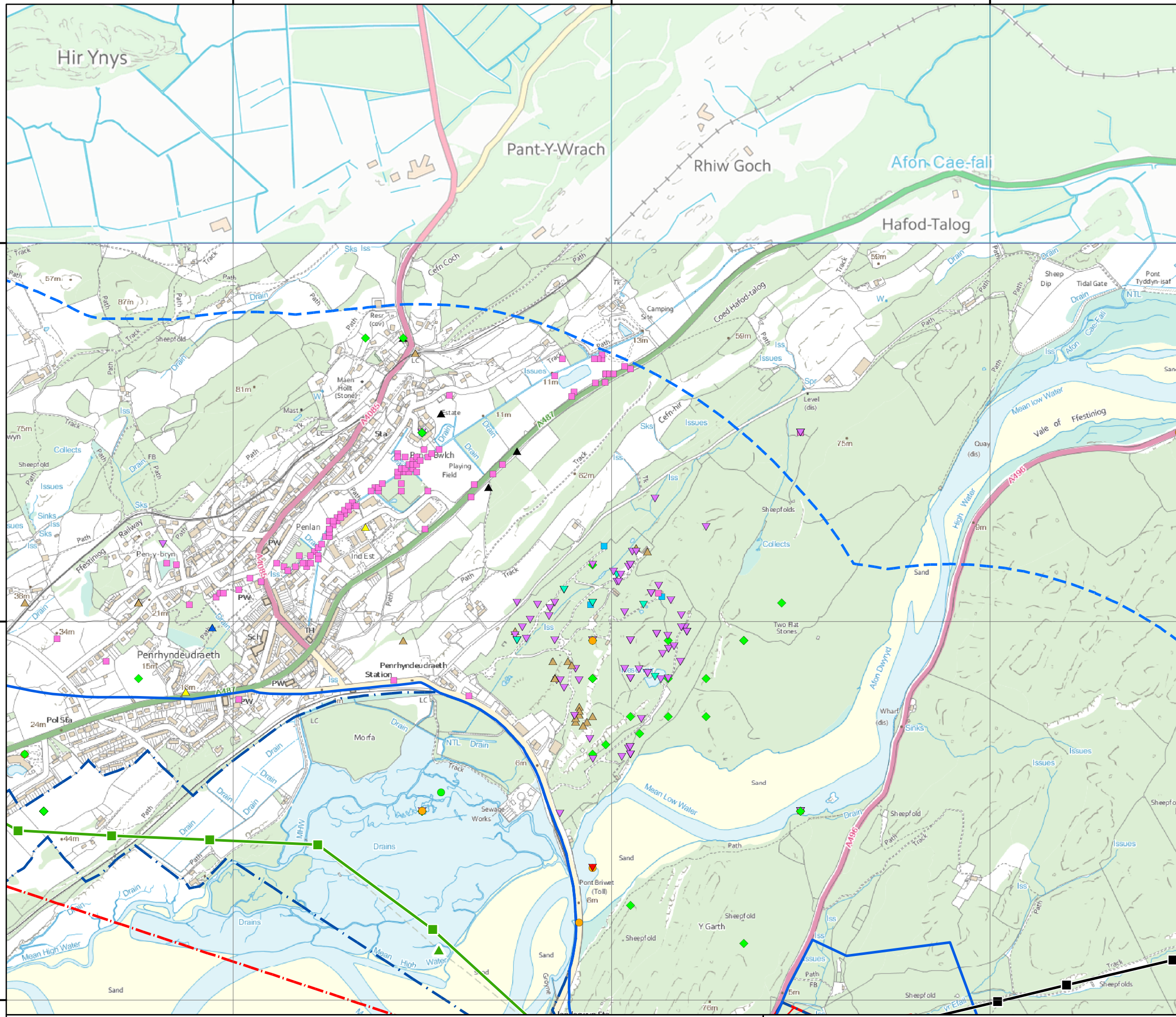
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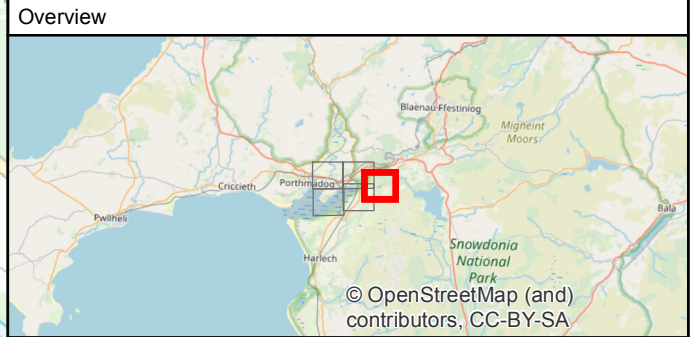
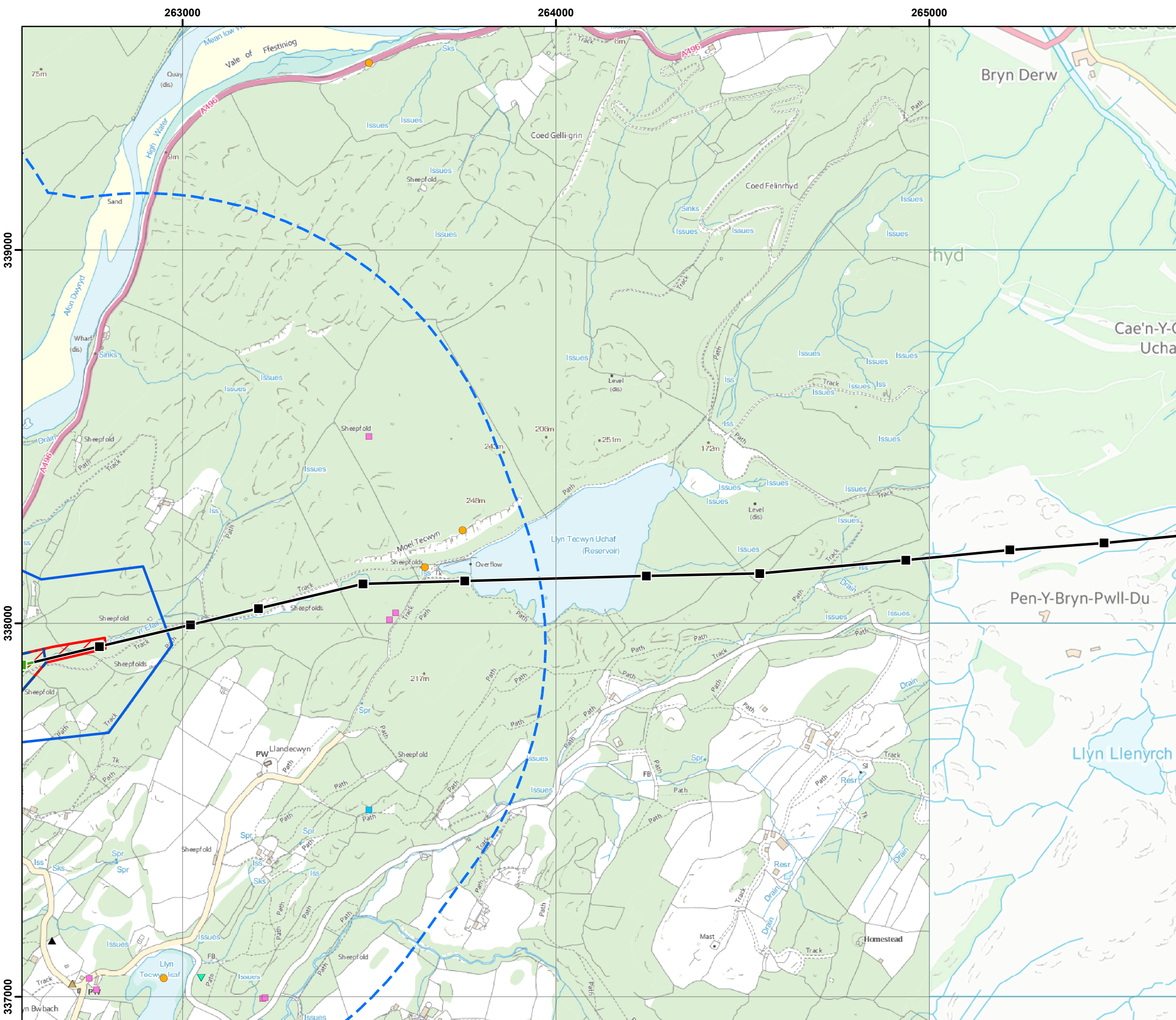
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- Legend**
- Area of Search for Permanent and Temporary Works
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  - Ecological Area of Search
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  - ▲ Badger
  - ▲ Bat
  - ▲ Bluebell
  - Otter
  - Schedule 9 Plant
  - ▼ Toad

Source: Study Area: P6 (with western extension) NG & RSK Existing Infrastructure - National Grid, Marine Environment - NRW, Species Records - Cofnod

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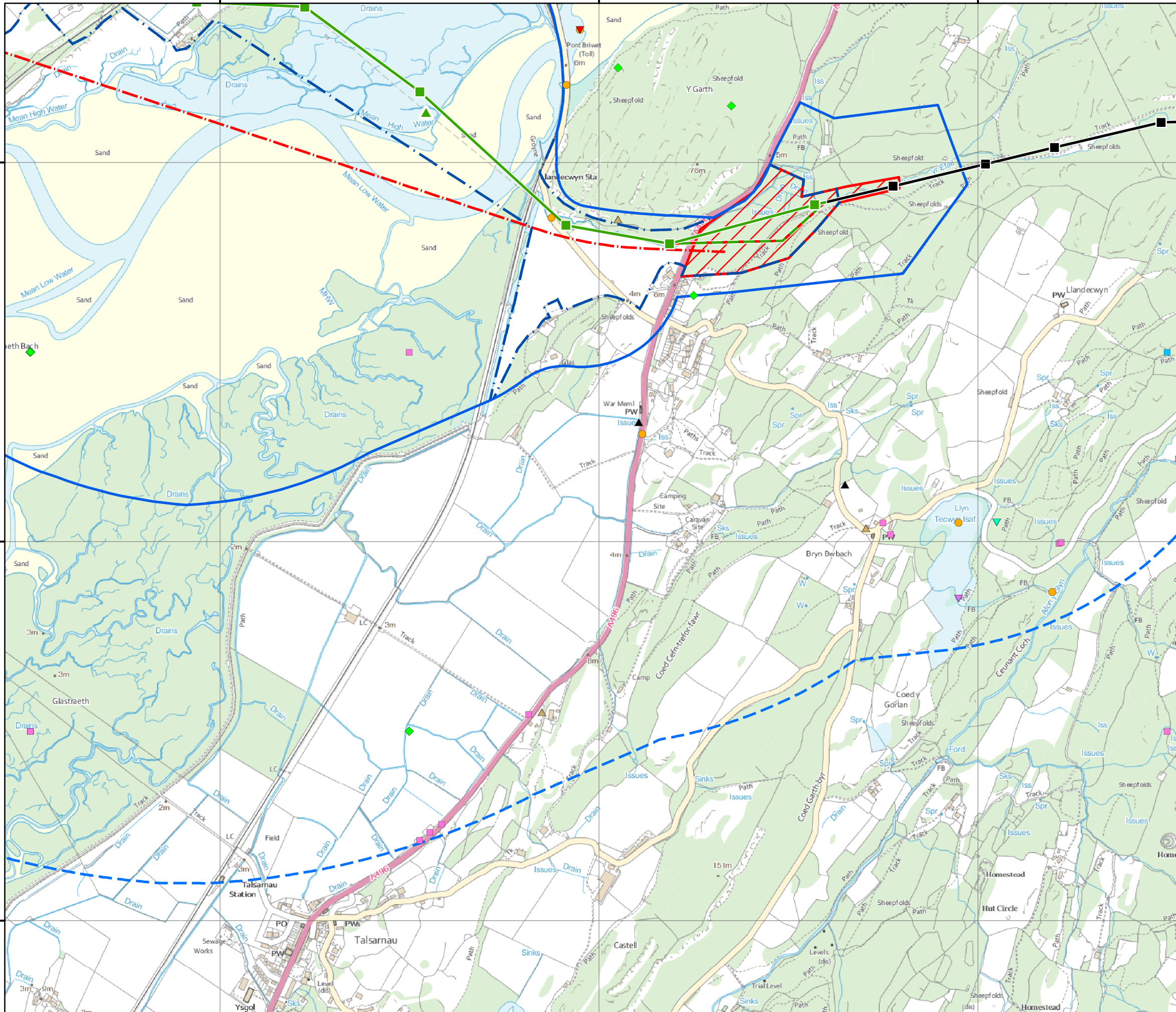
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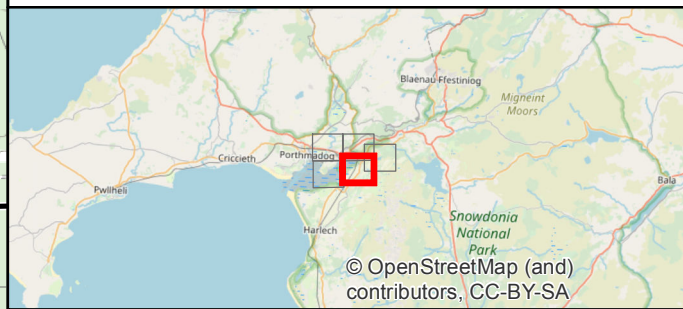
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Overview



Legend

- Area of Search for Permanent and Temporary Works
- 1km Study Area
- Ecological Area of Search
- Existing National Grid Overhead Line
- Temporary Overhead Line Diversion
- Proposed Sealing End Compound/ Tunnel Head House Search Area
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- Otter
- Reptile
- Schedule 1 Bird
- Schedule 9 Plant
- Toad

Source: Study Area: P6 (with western extension) NG & RSK Existing Infrastructure - National Grid, Marine Environment - NRW, Species Records - Cofnod

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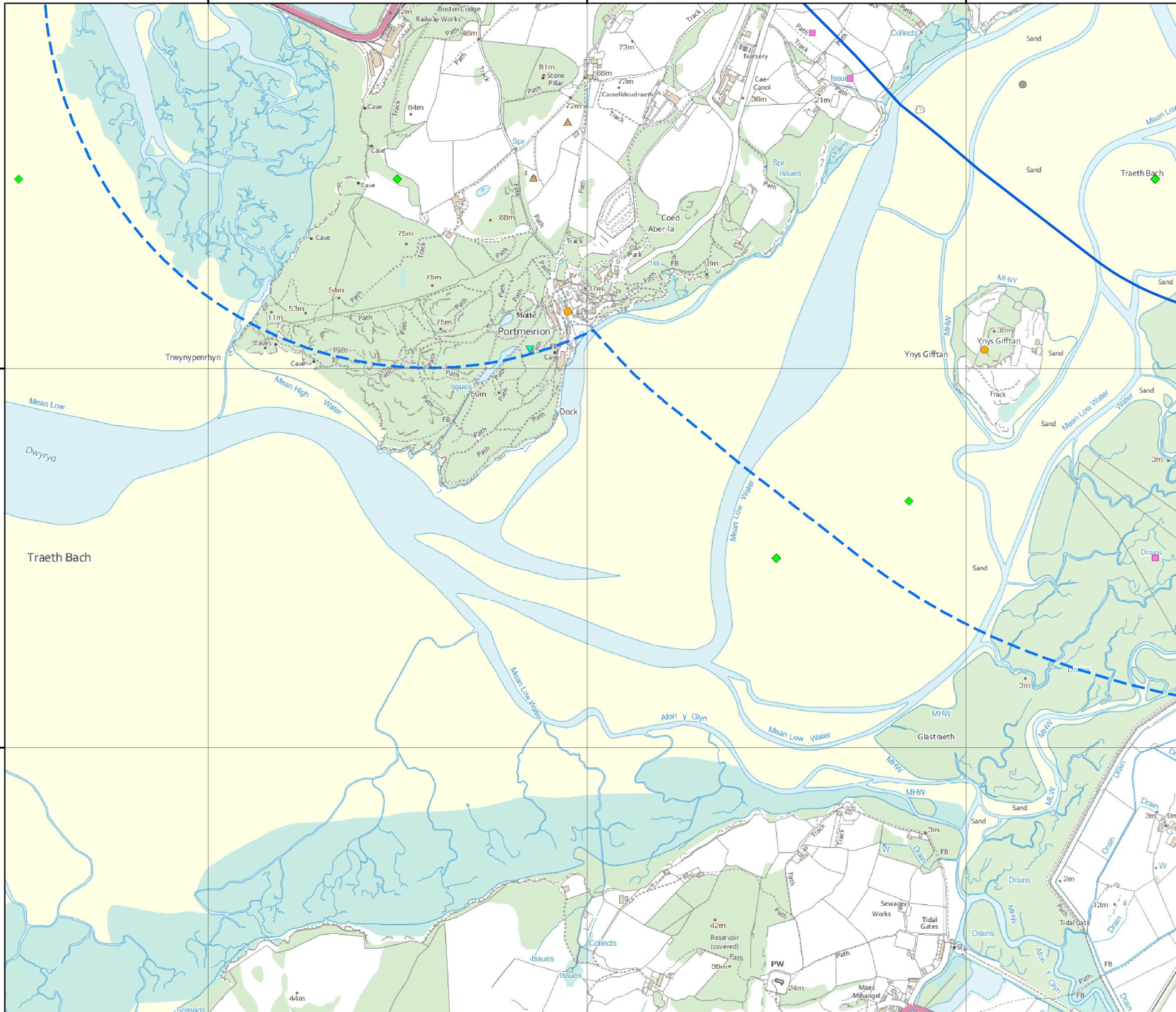
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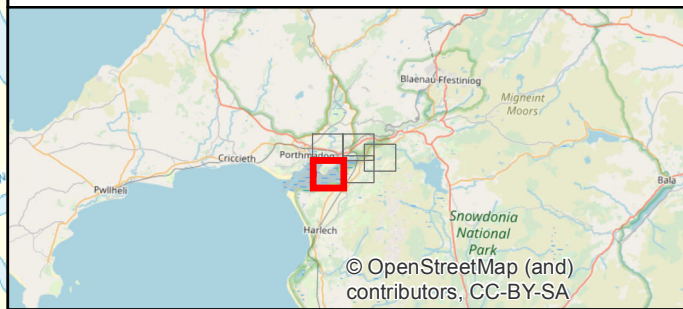
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Overview



Legend

- Area of Search for Permanent and Temporary Works
- 1km Study Area
- ▲ Bat
- Bluebell
- Grey Seal
- Otter
- ◆ Schedule 1 Bird
- Schedule 9 Plant
- ▼ Toad

Source: Study Area: P6 (with western extension) NG & RSK Existing Infrastructure - National Grid, Marine Environment - NRW, Species Records - Cofnod

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## Phase 2 Surveys

- 5.20 Phase 2 Surveys were carried out in 2016. The results of the Phase 2 Surveys will be presented as a Technical Appendix to the Ecological Chapter of the Environmental Assessment Report. A summary is provided below to inform the Screening and Scoping Report.

### National Vegetation Classification (NVC)

- 5.21 Habitats of value were identified during the Extended Phase 1 Habitat Survey. A full botanical survey was undertaken on all habitats identified as of high value (grasslands) and to be potentially affected by the Proposed Project. Methods used followed the NVC Users' Handbook (Rodwell, 2006).
- 5.22 Quadrat sampling was used to show that grasslands are improved and semi-improved agricultural grasslands. Plant communities typical of mires were identified in the Proposed SEC/ Tunnel Head House Search Area on the eastern side of the Dwyrdd Estuary (see Figure 2.1). The mires in particular have modest to high plant diversity with a number of specialist species and are therefore considered to have value to nature conservation. The mire communities are listed as UK Priority Habitats. UK Priority Habitats have some protection under the planning system.

### Hedgerow Survey

- 5.23 Hedgerows were surveyed following the 'hedgerow evaluation and grading system' (HEGS), following methods set out in Clements and Toft (1992). This method requires surveying of the entire length of each hedgerow potentially affected by the works. Important features were recorded, such as:
- notable flora and fauna;
  - dimensions (height, length, width);
  - number of gaps;
  - whether they contain trees; and
  - other associated features (i.e. ditch).
- 5.24 None of the hedgerows within the survey area were categorised as of nature conservation value and they are not important under the Hedgerow Regulations Act 1997.

### Water Vole

- 5.25 Watercourses within the Survey Area are considered suitable habitat for water vole. All suitable watercourses likely to be affected by the Proposed Project and within a 50m buffer were surveyed for signs of water vole and a full habitat assessment undertaken.
- 5.26 While the ditches and watercourses were classified as suitable, no evidence of water vole was recorded during any of the surveys.

### Otter

- 5.27 Waterbodies and adjacent habitats were surveyed in 2016 for signs of otter to establish the levels of activity and establish if holts are present. Evidence of Otter activity was recorded at two locations, one to the north of the Survey Area and one adjacent to the mire at the east of the Survey Area.

### Wintering Bird Surveys

- 5.28 Suitable habitat for wintering birds was recorded within the survey area and therefore wintering bird surveys were required to assess the bird assemblage. Surveys were carried out in winter 2015/2016 and were repeated in winter 2017/2018. Surveys were undertaken in accordance with Gilbert *et al.* (2001).
- 5.29 Survey results suggest regular good-sized populations of redshank (*Tringa totanus*), pintail (*Anas acuta*), black-headed gull (*Larus ridibundus*), mallard (*Anas platyrhynchos*) and teal (*Anas crecca*). Large populations of Canada goose (*Branta canadensis*). Lower populations of cormorant (*Phalacrocorax carbo*), little grebe (*Tachybaptus ruficollis*), oystercatcher (*Haematopus ostralegus*), goosander (*Mergus merganser*), curlew (*Numenius arquata*), snipe (*Gallinago gallinago*), herring gull (*Larus argentatus*), shelduck (*Tadorna tadorna*), great black-backed gull (*Larus marinus*), little egret (*Egretta garzetta*), grey heron (*Ardea cinerea*), kingfisher (*Alcedo atthis*), lesser black-backed gull (*Larus fuscus*), goldeneye (*Bucephala clangula*), wigeon (*Anas penelope*) and barnacle goose (*Branta leucopsis*).

### Invasive Plant Surveys

- 5.30 Japanese Knotweed was recorded during the Extended Phase 1 Habitat Survey. An invasive species survey was carried out in summer 2016 and updated in summer 2018. This recorded the presence of *Crassula helmsii* (New Zealand Pigmyweed), *Crocospia xrocospmiiflora* (Montbretia) and *Fallopia japonica* (Japanese Knotweed) at various locations in the Survey Area, primarily to the north west of the estuary.

### Bat Surveys

- 5.31 All suitable buildings and mature trees potentially affected by the Proposed Project were assessed for their potential to support roosting bats. No buildings suitable for roosting bats will be affected by the Proposed Project and therefore buildings are not considered further.
- 5.32 Six mature trees with features suitable for roosting bats were identified in 2018. No evidence of bats was recorded in any of the trees during aerial inspections in summer 2018.
- 5.33 Bat activity surveys, again following published guidance (Collins, J. (ed), 2016), were carried out in 2016 and 2018. The areas covered by the surveys included suitable foraging and commuting habitat within and adjacent to the Ysbyty Bron Y Garth SSSI and Coedydd Derw a Safleoedd Ystumod Meirion/ Meirionnydd Oakwoods and Bat Sites SAC, and the Proposed SEC/ Tunnel Head House Search Area on the eastern side of the Dwyrdd Estuary as agreed with statutory consultees.
- 5.34 During the transect surveys bat foraging and commuting activity was recorded in association with hedgerows, lines of trees and woodland edges with concentrated activity along the woodland edge adjacent to the SAC.

### Reptiles Surveys

- 5.35 Reptiles were surveyed using a combination of Visual Encounter Survey and Artificial Refuge Survey. Suitable habitat within the Survey Area, potentially affected by the Proposed Project were surveyed on a minimum of seven occasions to establish presence (Froglife, 1999).
- 5.36 Reptiles are present throughout the Survey Area including Common Lizard, Slow-worm, Adder and Grass Snake.

### **Badger Surveys**

- 5.37 Evidence of badger activity was recorded during the Extended Phase 1 Habitat Survey and a full badger survey was therefore carried out in 2016 and repeated in 2018.
- 5.38 Badger activity is high within the north-western end of the Survey Area which provides extensive suitable habitat for sett building and foraging.
- 5.39 There are four outlier setts within the Survey Area. Due to the high levels of badger activity and the large number of Badgers seen during the bat activity transects, it is likely that there is a main sett just outside the Survey Area, probably close to where the Badgers were seen.

### **Other Mammals Surveys**

- 5.40 The Survey Area provides a range of habitats for other mammals such as polecat, brown hare and hedgehog. Habitat suitable for these species was also recorded during the Extended Phase 1 Habitat Survey. No incidental evidence of polecat, hedgehog or brown hare was recorded during any surveys in 2016 or 2018.
- 5.41 Consideration for Section 7 Priority Species and Habitats under the Environment (Wales) Act 2016 i.e. species of principal importance for the purpose of conserving biodiversity will be made within the EclA with regards to potential impacts.

### **Potential Impacts**

- 5.42 The EclA will include an assessment of potential impacts and the effects on ecological receptors. Based on the information available at the Screening and Scoping phase, examples of potential effects of the Proposed Project on ecology and nature conservation could include:
- Potential for indirect impacts to statutory designated sites which may require the implementation of mitigation;
  - The short sections of undergrounding of cable (between the Tunnel Head House and SEC) can lead to habitat loss (temporary) and habitat disturbance, which could lead to severance of important commuting and foraging routes (hedgerow), particularly of sensitive bat species such as lesser horseshoe;
  - Potential reduction in collision impacts (birds) resulting from the removal of existing OHL infrastructure;
  - Areas of habitat would be lost due to land-take for the proposed SECs / tunnel head houses and also temporarily for construction working areas, access tracks and storage of construction materials;
  - If suitable mitigation were not undertaken, there is a risk of impacts (direct and indirect) to legally protected species, including badgers, otter, reptiles, roosting as well as foraging and commuting bats, breeding birds, wintering birds and common toad. Some disturbance to protected species might be expected through noise, vibration, lighting and air emissions (dust). This could particularly impact on sensitive habitats, badger setts (within 30m), birds, bats, amphibians and reptiles, within and immediately adjacent to the Proposed Project.

### **Proposed Assessment Methodology**

- 5.43 The EclA will be undertaken in accordance with the Guidelines for Ecological Impact Assessment in the UK and Ireland (Chartered Institute of Ecology and Environmental Management, 2016) and BS42020:2013 Biodiversity – Code of practice for planning and development (BSI, 2013). These documents provide guidance on the process of identifying

the value of ecological receptors, characterising effects upon them and assessing whether these effects are significant.

- 5.44 Potential effects to baseline ecological conditions/ receptors associated with the Proposed Project will be identified and an impact assessment carried out. Mitigation measures to avoid or reduce likely effects will be provided and opportunities for enhancement measures will be identified.

### EcIA Assessment Methodology

- 5.45 The assessment method uses a process of assigning ecological values to the identified ecological receptors, as presented in Table 5.1, predicting and characterising potential ecological impacts and mitigation measures and, through this process, determining the significance of residual effects on ecological receptors.

### Receptor Sensitivity

- 5.46 The EcIA guidelines suggest that the value or importance of an ecological resource or feature should be defined in terms of a geographic scale. Therefore, the potential value of ecological receptors on, and in the immediate vicinity of, the Proposed Project has been considered at the following scales:
- International and European;
  - National (i.e. Wales);
  - Regional (i.e. North West of Wales);
  - Metropolitan, County, vice-county or other local authority-wide area;
  - Local (the Site plus a 1km radius); and
  - Site (the Proposed Project).
- 5.47 Where the value is considered less than of site value it is considered 'negligible'.

**Table 5.1: Resource/Receptor Evaluation Criteria**

Receptor value	Examples
International and European (Very High)	<p>An internationally designated site or candidate site.</p> <p>A viable area of a habitat type listed in Annex I of the Habitats Directive, or smaller areas of such habitat that are essential to maintain the viability of a larger whole.</p> <p>A European protected species listed in the Conservation (Natural Habitats, &amp;c.) Regulations 1994.</p>
National (High)	<p>A nationally designated site.</p> <p>A viable area of a priority habitat identified in the UK BAP or of smaller areas of such habitat that are essential to maintain the viability of a larger area.</p> <p>Any regularly occurring population of an internationally important species that is threatened or rare in the UK.</p>

Receptor value	Examples
Regional (High to Medium)	<p>Viable areas of key habitat identified in the Regional BAP, but not identified as priority habitat in the UKBAP, or smaller areas of such habitat that are essential to maintain the viability of a larger area.</p> <p>Viable areas of key habitat identified as being of Regional value in the appropriate Natural Area profile.</p> <p>A regularly occurring, locally significant number of a species identified as important on a regional basis.</p>
Metropolitan, County, vice-county or other local authority-wide area (Medium)	<p>County Council/Unitary Authority designated sites and other sites which the designating authority has determined meet the published ecological selection criteria for designation, including Local Nature Reserves.</p> <p>Viable areas of habitat identified in a County BAP.</p> <p>A regularly occurring, locally significant number of a species identified as important on a county/metropolitan basis.</p> <p>Semi-natural woodland greater than 0.5ha that is considered to be in 'good condition'.</p>
Local (Low)	<p>Semi-natural woodland smaller than 0.25 ha.</p> <p>Diverse and/or ecologically valuable hedgerows.</p> <p>Diverse and/or ecologically valuable grassland.</p> <p>Habitat included in an agri-environment scheme but not otherwise containing species or habitats listed above.</p> <p>Common species legally protected primarily for reasons of animal welfare (badger, reptiles).</p> <p>Established semi-natural or artificial habitats of limited ecological value when assessed in isolation but which offer a range of opportunities for widespread and commonly occurring species within the wider landscape.</p>
Site (Low)	Features of value to the immediate area only.

### Magnitude of Impact

- 5.48 When describing ecological impacts reference will be made to the following characteristics:
- positive or negative (determined according to whether the change is in accordance with nature conservation objectives and policy);
  - extent (spatial or geographical area over which the impact/effect may occur);
  - magnitude (size, amount, intensity and volume);
  - duration (defined in relation to ecological characteristics (such as a species' lifecycle) as well as human timeframes e.g. short, medium or long-term and permanent or temporary);
  - timing (critical life-stages or seasons e.g. bird nesting season);

- frequency (number of times an activity occurs); and
- reversibility (an irreversible effect is one from which recovery is not possible within a reasonable timescale or there is no reasonable chance of action being taken to reverse it. A reversible effect is one from which spontaneous recovery is possible or which may be counteracted by mitigation).

5.49 The assessment will describe those characteristics relevant to understanding the ecological effect and determining the significance.

### Significance of Effects

- 5.50 This significance of the predicted effect depends on both the characteristics and magnitude of the impact and the value of the receptor. CIEEM states that: “An ecologically significant effect is defined as an effect (negative or positive) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographical area.”
- 5.51 Once an effect is identified, the geographic scale at which it will take effect is established. For example, an effect may not be significant at a national scale but may be significant at a county or local scale. All of these judgments are based, wherever possible, on quantitative evidence; however, in some cases the professional judgment of an experienced ecologist may also be required. Taking the value of the receptor (geographic scale) and the magnitude of impact into account, an evaluation of the significance of an effect can be derived.

**Table 5.2: Significance Criteria Matrix**

Geographic scale	Magnitude of impact		
	High	Medium	Low
Very High (International)	Major	Major	Major/Moderate
High (National)	Major	Major/Moderate	Major/Moderate
Medium – High (Regional)	Major/Moderate	Moderate	Moderate
Medium (County)	Major/Moderate	Moderate	Moderate/Minor
Low (Local)	Moderate/Minor	Minor	Minor/Negligible
Low (Site)	Minor/Negligible	Minor/Negligible	Negligible

- 5.52 Effects on ecology and nature conservation are subsequently assessed under the CIEEM guidance as being:
- Not significant; or
  - A significant positive or negative effect at the relevant geographical scale.
- 5.53 Further explanation is provided in Table 5.3.

**Table 5.3: Ecological Impacts Significance Criteria in Accordance with CIEEM**

Significance		Equivalent CIEEM Assessment
Significant	Major beneficial	Positive impact on ecological integrity or conservation status at regional, national or international level.

Significance		Equivalent CIEEM Assessment
	Moderate beneficial	Positive impact on ecological integrity or conservation status at borough - county level.
Non-significant	Minor beneficial	Positive impact on ecological integrity or conservation status at zone of influence - local level.
Neutral	Negligible	No significant impact on ecological integrity or conservation status.
Non-significant	Minor adverse	Negative impact on ecological integrity or conservation status at zone of influence - local level.
Significant	Moderate adverse	Negative impact on ecological integrity or conservation status at borough - county level.
Significant	Major adverse	Negative impact on ecological integrity or conservation status at regional, national or international level.

### Cumulative and Interactive Effects

- 5.54 The EclA will consider the interaction of effects with other disciplines, such as surface water, archaeology and cultural heritage, landscape, air quality and noise. As relevant, the EclA will also assess the cumulative effects in association with other proposed developments in the vicinity of the site.

### Habitats Regulation Assessment

- 5.55 As part of the ecological assessment process, there will be a requirement for assessment of the Proposed Project under the Conservation of Habitats and Species Regulations (as amended) 2010 and (depending on the details of the Proposed Project design) for Appropriate Assessment.

## Proposed Mitigation Measures

### Ecological Design Input

- 5.56 Where possible, significant ecological impacts will be avoided through careful design; for example, by:
- Sensitive micro-siting of the Proposed Project where possible;
  - Sensitive timing to avoid impacts on important groups such as wintering birds; and
  - Incorporating appropriate mitigation measures in to the design and construction programme to avoid significant impacts on legally protected species.

### Potential Mitigation Measures

- 5.57 Where avoidance of impacts is not possible, suitable mitigation will be implemented to ensure that the residual impacts are not significant. Mitigation measures would be discussed and agreed with ecological consultees as appropriate.
- 5.58 In addition to determining the significance of an effect on any ecological features, the assessment will also identify the need for protected species licensing.

## General Mitigation

5.59 The following generic mitigation proposals will be considered during the EclA process:

- A Construction Environmental Management Plan would be prepared and implemented to ensure that methods of best practice are followed.
- Where possible, designated sites will be avoided; where this is not possible, efforts will be made to reduce the impact through timing, construction measures, pollution control and habitat reinstatement measures. All such measures would be agreed with ecological consultees ahead of implementation.
- The Extended Phase 1 Habitat Survey, a review of aerial photography and an NVC survey identified the presence of habitats of ecological value (i.e. saltmarsh). Where possible, these habitats will be avoided by the Proposed Project; where this is not possible; efforts will be made to reduce the impact either through timing, construction measures, pollution control and habitat reinstatement measures.
- Where vegetation is removed, reinstatement programmes will use native species appropriate to the existing habitat type using seeds from local provenance. All restoration plans would be agreed with ecological consultees prior to implementation.
- Suitable mitigation measures would be implemented to minimise the impact on reptiles.
- Works would be carefully timed to avoid impacts to breeding birds during the removal of vegetation during the construction phase. Where this is not possible, deterrents will be implemented to minimise the risk of birds nesting. Prior to the removal of hedgerows, rank grassland or woodland (including single trees), an ecologist would inspect the area for active nests.
- If any European Protected Species are likely to be adversely affected by the works, a European Protected Species Mitigation Licence (EPSML) would be required from NRW.
- A 30m standoff would be retained from active badger setts and mitigation would be implemented to minimise disturbance. If it is necessary to exclude badgers from a sett, a licence would be required from NRW.

## Issues to be Scoped Out

5.60 Based on the results of baseline surveys to date, the following ecological receptors or potential impacts are proposed to be scoped out of the assessment:

- Fish;
- Water Voles; and
- Saltmarsh (this habitat will be assessed as part of the Marine Ecology Chapter of the Environmental Assessment Report).

## Overview of the Likely Significance of Effect

5.61 From the information currently available, it is anticipated that the Proposed Project will give rise to impacts that can be mitigated to a non-significant level.