



Pennant Walters Ltd

Mynydd Glyn Wind Farm

Draft Environmental Statement

Appendix 8A Preliminary Ecological Appraisal



This report was prepared by WSP Environment & Infrastructure Solutions UK Limited (formerly known as Wood Environment & Infrastructure Solutions UK Limited), company registration number 02190074, which is carrying out these services as a subcontractor and/or agent to Wood Group UK Limited

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Report for

Pennant Walters

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1. Introduction

1.1 Background

Wood Group UK Ltd (Wood¹) was commissioned by Pennant Walters to undertake a Preliminary Ecological Appraisal (PEA) of an area known as Mynydd y Glyn (hereafter referred to as 'the Site'), which is located at National Grid Reference (NGR) ST 03626 89459 and measures approximately 182.27 hectares (ha) and shown in **Figure 1.1 (Annex A)**.

This PEA has been informed by the completion of a desk study and an extended Phase 1 habitat survey. The approach taken broadly follows that detailed in the *Guidelines for Preliminary Ecological Appraisal*², with the standard Phase 1 habitat survey³ methodology being extended to identify the presence, or potential presence, of legally protected species, habitats and species that are of importance for biodiversity conservation, and legally controlled species as detailed in the *Guidelines for Baseline Ecological Assessment*⁴.

1.2 Purpose of this report

This report has been prepared as part of an EIA relating to the Proposed Development of a wind farm at the Site. This report is intended to enable the early identification of potential ecological constraints; inform additional survey or mitigation requirements; and to establish the ecological baseline of the Site.

This report details the methods adopted and results of the extended Phase 1 habitat survey and makes recommendations for further work in relation to establishing the ecological baseline where required.

1.3 Proposed development

The Proposed Development is to construct and operate a wind farm of up to seven turbines and associated infrastructure including access tracks, transformer and a substation.

1.4 Site context

The Site is situated within the Rhondda Valley and is located approximately 3km west of Pontypridd. The Site comprises a plateau of extensive semi-improved acid grassland used for grazing livestock with steep-sloping sides. Blanket bog is present within the Site, which is designated as a Site of Importance for Nature Conservation (SINC). The Site is bordered by habitats synonymous with those on Site, as well as conifer plantation woodland in the northeast. In the wider landscape surrounding land use is dominated by livestock grazing agriculture, with plantation conifer woodland managed for forestry, and small urban settlements.

¹ Now WSP Environment & Infrastructure Solutions UK Ltd

² CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal*. Chartered Institute of Ecology and Environmental Management, Winchester.

³ JNCC (2010). *Phase 1 Habitat Survey – a Technique for Environmental Audit*. JNCC, Peterborough.

⁴ IEA (1995) *Guidelines for Baseline Ecological Assessment*. E & F Spon, London.

2. Legislative and policy context

A number of sites, habitats and species are protected through either statute or national or local policy: details of these are provided in Boxes 1 and 2 below. Policies relevant to biodiversity conservation are listed in **Table 2.1**, along with an outline of the issues included in these policies that need to be considered when undertaking an ecological appraisal.

Box 1 Designated Wildlife Sites, and Priority Habitats and Species

Statutory nature conservation sites

Internationally important sites: Special Areas of Conservation (SACs) and candidate SACs, Special Protection Areas (SPAs) and proposed SPAs, Sites of Community Importance, Ramsar sites and European offshore marine sites.

Nationally important sites: Sites of Special Scientific Interest (SSSIs) that are not subject to international designations and National Nature Reserves (NNRs)

Local Nature Reserves (LNRs) are statutory sites that are of importance for recreation and education as well as nature conservation. Their level of importance is defined by their other statutory or any non-statutory designation (e.g. if an LNR is also an SSSI but is not an internationally important site, it will be of national importance). If an LNR has no other statutory or non-statutory designation it should be treated as being of district-level importance for biodiversity (although it may be of greater socio-economic value).

Non-statutory nature conservation sites

Non-statutory biodiversity Sites in South East Wales are designated as Sites of Importance for Nature Conservation (SINCs).

Priority habitats and species

In this report, the geographic level at which a species/habitat has been identified as a priority for biodiversity conservation is referred to as its level of 'species/habitat importance'. For example, Habitats of Principal Importance (HoPI) for the conservation of biodiversity in Wales (under Section 7 of the 'The Environment (Wales) Act 2016') are identified as of national species/habitat importance reflecting the fact that these species/habitats have been defined at a national level. The level of importance therefore pertains to the species/habitat as a whole rather than to individual areas of habitat or species populations, which cannot be objectively valued, other than for waterfowl, for which thresholds have been defined for national/international 'population importance'.

- International importance: populations of species or areas of habitat for which European sites are designated;
- International importance: populations of birds meeting the threshold for European importance (1% of the relevant international population);
- National importance: Section 7 of the 'The Environment (Wales) Act 2016' introduces a list of living organisms and types of habitat in Wales, known as Habitats and Species of Principal Importance, which in Wales are considered of key significance to sustain and improve biodiversity. These are listed on: <https://www.biodiversitywales.org.uk/Environment-Wales-Act>.
- National importance: Species listed as being of conservation concern in the relevant UK Red Data Book (RDB) or the Birds of Conservation Concern⁵ Red List.
- National importance: Nationally Scarce species, which are species recorded from 16-100 10x10km squares of the national grid;
- National importance: Populations of birds comprising at least 1% of the relevant British breeding/wintering population (where data are available);
- National importance: Ancient woodland (i.e. areas that have been under continuous woodland cover since at least 1600);
- County importance: Species and habitats listed in Local Biodiversity Action Plan for Rhonda Cynon Taf.

⁵ Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. and Gregory, R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds*, 108:708–746.

Box 2 Legally Protected and Controlled Species

Legal protection

Many species of animal and plant receive some degree of legal protection. For the purposes of this study, legal protection refers to:

- Species included on Schedules 1, 5 and 8 of the *Wildlife and Countryside Act 1981* (as amended), excluding:
 - ▶ species that are only protected in relation to their sale (see Section 9[5] and 13[2]), reflecting the fact that the proposed development does not include any proposals relating to the sale of species; and
 - ▶ species that are listed on Schedule 1 but that are not likely to breed on or near the Site, given that this schedule is only applicable whilst birds are breeding;
- Species included on Schedules 2 and 5 of *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*
- Badgers, which are protected under the *Protection of Badgers Act 1992*.

A summary of the legislation pertaining to faunal species that may occur on the Site is provided in **Annex B**

Legal control

Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) lists species of animal that it an offence to release or allow to escape into the wild and species of plant that it is an offence to plant or otherwise cause to grow in the wild.

Table 2.1 Policy Issues Considered

Policy Reference	Policy Issue
Future Wales: The National Plan	The Welsh national development framework sets the direction for development in Wales to 2040 and includes a Habitats Regulations Assessment. Policy 9 – Resilient Ecological Networks and Green Infrastructure outlines measures to ensure the enhancement of biodiversity, the resilience of ecosystems and the provision of green infrastructure.
Planning Policy Wales – Chapter 6 Distinctive and Natural Places (11th Ed.; 2021)	Chapter 6 of Planning Policy Wales (PPW) sets out the Welsh Government’s objectives for Distinctive and Natural Places theme of planning policy topics covers historic environment, landscape, biodiversity and habitats, coastal characteristics, air quality, soundscape, water services, flooding and other environmental (surface and sub-surface) risks. In particular, the Biodiversity and Resilience of Ecosystems section puts emphasis on planning authorities to have regard for the State of Natural Resources Report (SoNaRR) and Area Statements published by Natural Resources Wales.
Technical Advice Note 5 (TAN5) Nature Conservation and Planning (2009)	Welsh Governments (WG) policy on positive planning for nature conservation and developments affecting designated sites and habitats, along with protected priority habitats and species.
Rhondda Cynon Taf Local Development Plan (LDP) up to 2021 (Adopted 2011)	The LDP identifies where allocations for new developments such as housing, employment, community facilities, and roads have been made. It provides a framework for local decision making and brings together both development and conservation interests to ensure that any changes in the use of land are coherent and provides maximum benefits to the community.

Policy Reference	Policy Issue
Rhondda Cynon Taf Supplementary Planning Guidance (SPG) Nature Conservation 2011	The Rhondda Cynon Taf Supplementary Planning Guidance (SPG) on Nature Conservation was produced in 2011 and provides additional guidance to support the Local Development Plan (LDP) policies. The purpose of the SPG is to assist those submitting and determining planning applications in Rhondda Cynon Taf to ensure that nature conservation is protected and conserved when development is proposed.
Rhondda Cynon Taf Biodiversity Action Plan (Action for Nature) 2000 (updated 2008)	The national strategy for biodiversity is delivered at local level via Local Biodiversity Action Plans (LBAP). Rhondda Cynon Taf LBAP (Action for Nature) is the driver to protect, enhance and manage the biodiversity resource, by setting out objectives, targets and actions for the conservation of biodiversity within Rhondda Cynon Taf.

3. Methodology

3.1 Desk study

A data-gathering exercise was undertaken to obtain information relating to statutory and non-statutory nature conservation sites, habitats of principle importance and species, and legally protected and controlled species (see Boxes 1 and 2). The data were obtained from South East Wales Biodiversity Records Centre (SEWBRc), from the MAGIC website, from aerial photographs and from Ordnance Survey mapping. Data for the last ten years were gathered for:

- statutory designated biodiversity sites of international importance within 10km of the Site;
- statutory designated biodiversity sites of national/ local importance within 2km of the Site;
- non-statutory designated biodiversity sites areas within 2km of the Site;
- records of legally protected/important species within 2km of the Site, and bat roosts within 10km of the Site;
- European Protected Species Mitigation Licences (EPSMLs) within 5km of the Site;
- waterbodies within 500m of the Site; and
- Habitats of Principal Importance for the conservation of biodiversity in Wales and the Habitats of Principal Importance for Rhondda Cynon Taf within 2km of the Site.

Waterbodies were identified by reference to 1:25,000 scale Ordnance Survey mapping and online aerial photography⁶. In the absence of significant barriers to movement, 500m is the maximum distance that great crested newts (GCNs) generally move from their breeding ponds to occupy surrounding areas of suitable terrestrial habitats. Therefore, where a proposed development is located within 500m of a water body, consideration is given to the potential for the water body to support breeding GCNs.

3.2 Field survey

An extended Phase 1 habitat survey of the Site, including a 250m buffer from the boundary, was undertaken by an ecologist from Wood⁷ on the 29 April and 01 May 2020. An additional survey was undertaken on the 30 July 2020 to gather detail on species throughout the growing season, recording plants that are more visible at different times and support broad habitat classifications.

An updated Phase 1 habitat survey was carried out on 12 August 2022 and 24 August 2022, this was to ensure all areas of the Site were surveyed following changes to the Site boundary and to update the habitat survey from 2020. Changes in habitat types recorded between Phase 1 surveys in 2020 and 2022 are summarised in **Annex B**.

During the survey, distinct habitats were identified, and any features of interest subjected to a more detailed description were target noted (TN)⁸. As the standard Phase 1 habitat survey methodology is mainly concerned with vegetation communities, the survey was extended⁹ to allow for the

⁶ https://www.google.co.uk/intl/en_uk/earth/

⁷ Claire Neale Senior Consultant Ecologist MSc MCIEEM

⁸ Joint Nature Conservation Committee (2007). *Handbook for Phase 1 habitat survey - a technique for environmental audit*. JNCC, Peterborough.

⁹ Institute of Environmental Assessment (1995). *Guidelines for Baseline Ecological Assessment*. E&FN Spon, London.

provision of information on other ecological features, including identification of the presence or potential presence of legally protected and otherwise notable species.

It should be noted that while every effort has been made to provide a comprehensive description of the Site, this survey is intended to identify habitat types and does not constitute a full botanical survey.

Protected and otherwise notable species

The methodologies used to establish the presence or potential presence of specific species and/ or species groups are summarised below. These relate to those species or biological taxa that the desk study and habitat types present indicated could occur on the Site.

The survey methods that were employed during the extended Phase 1 habitat survey to identify presence of legally protected/priority species are detailed below. **Annex C** summarises relevant legislation relating to these species. Species are referred to by common name in the main text of the report, with scientific names provided in **Annex D**.

Where possible, the survey area included the entirety of the Site and adjoining areas of land up to 250m from the Site boundary, albeit noted access had not been agreed for all land adjacent to the Site, therefore these areas were viewed from the Site boundary and from Public Rights of Way (PRoW).

Badger

During the survey the habitats on the Site were assessed for their potential to provide suitable areas for sett excavation and badger foraging. Any evidence of badger activity was also recorded, such as:

- Setts - comprising either single holes or a series of holes likely to be connected underground;
- Hairs - usually with a white root, black band, white tip (often caught in sett entrances/ fences/ vegetation);
- Footprints – located in soft mud, often in sett entrances;
- Evidence of foraging – usually in the form of ‘snuffle holes’ (small scrapes created by badgers searching for insects and earthworms);
- Latrines - badgers usually deposit faeces in holes or scrapes in the ground; and
- Paths - particularly around setts or leading to feeding areas.

Mammal paths and snuffle holes were assumed to be created by badgers if the character of the path (in terms of size) was appropriate, and if other field signs were in close vicinity.

Bats

A general assessment of the suitability of the habitats on the Site to support roosting, foraging and commuting bats was made. During the survey, an initial assessment of the trees and buildings on and bordering the Site was undertaken to determine if further, more detailed preliminary roost assessments would be required to identify features with the potential to support roosting bats.

Dormouse

Hedgerows, scrub and woodland habitats within or bordering the Site were assessed for their suitability to support populations of dormice. This included an assessment of the suitability of the

Site for foraging by dormice, e.g. availability of hazel and honeysuckle, and the connectivity between habitats on the Site and other suitable habitat in the wider landscape.

Otter

The Site was assessed for its potential to provide habitats that would support otter. Such habitats may include the presence of any drainage ditches, streams, rivers, water bodies and other foraging habitat. Water of a significant depth and the presence of fish are important for foraging; however, otters will use sub-optimal habitat to commute through.

Water vole

Water courses on and bordering the Site were assessed for their suitability and potential to support water voles. Water voles generally prefer wide swathes of riparian vegetation both growing from the bank and in the water in which to forage and shelter. Earth banks are generally required for burrows and the species prefers slow-flowing water more than 1m deep¹⁰.

Great crested newt

The Site was assessed for its potential to provide suitable aquatic and terrestrial habitat that could support a population of GCN. This involved considering the provision of potential breeding and foraging habitats, as well as the provision of potential refugia e.g. log piles, hedgerows, grassland, ruderal and scrub habitat etc.

Habitat Suitability Index Assessment

Where accessible the water bodies identified within 500m of the Site, a habitat-based assessment was used to categorise the suitability of water bodies to support GCN using the Habitat Suitability Index (HSI) assessment. The HSI assessment process takes into account criteria developed by Oldham et al (2000)¹¹, which is based on ten indices relating to the suitability of a waterbody for GCN. The method calculates a score (between 0 and 1) which indicates the suitability of a waterbody to support GCN. It is a recognised tool for identifying waterbodies with greatest suitability to support this species and conversely assists in identifying unsuitable ponds or ditches that can be 'scoped-out' of further survey work. This method was undertaken in 2020 and then repeated in 2022 to confirm whether the status of the ponds on Site have changed.

The categorisation of HSI pond scores are as follows:

- <0.5 = Poor;
- 0.5 - 0.59 = Below Average;
- 0.6 – 0.69 = Average
- 0.7 – 0.79 = Good
- > 0.8 = Excellent

¹⁰ Strachan, R., Moorhouse, T. and Gelling, M. (2011). *Water vole Conservation Handbook. Third edition*. Wildlife Conservation Research Unit, Oxford

¹¹ Oldham, R.S., Keeble, J., Swan, M.J.S., Jeffcote, M (2000), Evaluating the Suitability of Habitat for Great Crested Newt (*Triturus cristatus*). *Herpetological Journal*.

Presence/likely absence surveys

The ponds identified within the desk study and confirmed as present during the extended Phase 1 survey underwent a single Environmental DNA (eDNA)¹² to determine presence/likely absence. This method requires one daytime visit to collect the samples, between 15 April and 30 June.

The eDNA surveys involved collecting water samples from an individual pond that were then subject to analysis to detect the presence of GCN DNA, which is deemed to provide an appropriate test to establish the presence/likely absence of this species (Natural England, 2015)¹³. eDNA sampling and analysis was undertaken in accordance with best practice guidance (Biggs et al., 2014)¹⁴, with samples analysed by SureScreen Scientifics¹⁵. This involved taking and combining 20 sub-samples of 30ml of pond water; representatively sampling pond habitats (i.e. areas of open water suitable for courtship displays, or vegetation suitable for egg-laying), and spaced around the pond as evenly as possible. The sub-samples were mixed, before six separate 50ml aliquots¹⁶ were taken and sent for laboratory analysis by SureScreen Scientific.

All eDNA surveys were undertaken by licenced Wood ecologists Claire Neale (NRW GCN Survey Licence Number: S087691/1) and Gary Lindsay (NRW GCN Survey Licence Number: S088151/1).

Reptiles

The Site and its surrounds were assessed for their potential to provide sheltering, foraging and breeding habitats for the four widespread reptile species: slow worm, viviparous lizard, grass snake and adder. These native reptile species generally require open areas with mixed-height vegetation, such as heathland, rough grassland, open scrub or (in the case of grass snake) water body margins. Suitable well drained and frost-free areas are needed so that they can survive the winter.

Birds

The Site was assessed for its potential to provide nesting habitat for breeding birds and/or its potential to support important assemblages of rare or notable bird species.

Other notable/priority species

An assessment was made of the potential for the Site to support any other species considered to be of value for biodiversity conservation, including those that were identified as occurring within the local area during the desk study.

Legally controlled species

The presence of any legally controlled, non-native, invasive plant species (see Box 2), such as Japanese knotweed, giant hogweed and Himalayan balsam was noted.

¹² This is one of the two methods accepted by Natural England for presence/likely absence surveys for GCN, the other being visits to the pond between mid-March and mid-June employing methods such as torch survey, bottle trapping, hand netting or egg searches

¹³ Natural England (2015) *Guidance Great Crested Newts: Surveys and Mitigation for Development Projects*. <https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects> [Accessed Online].

¹⁴ Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F (2014). *Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus) environmental DNA*. Freshwater Habitats Trust, Oxford.

¹⁵ <https://www.surescreenscientifics.com/forensic-ecology/>

¹⁶ A representative liquid sample taken from a larger amount of liquid.

3.3 Constraints

There is grazing access to sheep across the entire Site, and as a result of the intense grazing, and in some areas, exposure to wind, the sward of the grassland was generally short making species identification difficult.

4. Results

4.1 Desk Study

Statutory designated sites

Two statutory designated biodiversity sites of international importance were identified within 10km of the Site boundary, and two statutory designated biodiversity sites of national importance were identified within 2km. These sites are detailed in **Table 4.1** & **Table 4.2** and the locations of these sites are shown in **Figure 4.1** & **Figure 4.2 (Annex A)**.

Table 4.1 Sites with international statutory designation for biodiversity conservation sites within 10km.

Site	Type of designation	Approximate area (ha)	Ecological interest	OS Grid Reference	Approximate distance (m) and direction from the Site
Blackmill Woodlands	SAC	70.05	Designated as an example of old sessile oak woods at the southern extreme of the habitat's range in Wales and contributes to representation of the habitat in Wales and in south-west England.	SS929859	9,500 SW
Cardiff Beech Woods	SAC	114.45	Designated as one of the largest concentrations of <i>Asperulo-Fagetum</i> beech forest in Wales. The site also supports <i>Tilio Acerion</i> forests of slopes, screes and ravines.	ST118824	8,840 SE

Table 4.2 Sites with national statutory designation for biodiversity conservation sites within 2km.

Site and Map Reference Number	Type of designation	Approximate area (ha)	Ecological interest	OS Grid Reference	Approximate distance (m) and direction from the Site
Nant Gelliwion Woodland	SSSI	11.67	The Nant Gelliwion Woodland SSSI (Coed Gelli Draws) occupies a small tributary valley of the Rhondda which flows over Pennant Sandstone and superficial deposits of boulder clay. The mixed deciduous woodland is dominated by stands of sessile oak which occur with a scattering of beech on the free-drainage valley slopes. Alder dominates areas of wetter ground while birch, ash, hazel, hawthorn, willow and rowan are locally abundant.	ST 059887	1,248 SE
Rhos Tonyrefail	SSSI	244.71	Rhos Tonyrefail is a large lowland site of special interest for its marshy grassland, acid flush, species-rich neutral grassland, acid grassland, wet heath and blanket mire. These habitats are associated with areas of woodland. The site is also of special interest for its population of marsh fritillary butterfly.	ST005895, ST020875 and ST020890	448 SW

Non-statutory designated sites

SEWBRc returned records of eight SINC's within 2km of the Site. These are detailed in **Table 4.3** below and the location of these sites is shown in **Figure 4.3 (Annex A)**.

Table 4.3 Sites with non-statutory designation for biodiversity conservation within 2 km of the Site.

Site	Type of designation	Approximate area (ha)	Ecological interest	OS Grid Reference	Approximate distance (m) and direction from the Site
Mynydd y Glyn	SINC	74.34	Area of upland peat bog. The core of which is good condition peat bog, with surrounds that have been variously semi improved.	ST 031894	Within site
Bronwydd Woods	SINC	7.19	Ancient woodland with associated hillside ffridd.	ST 021912	1,100 N
Trebanog Slopes	SINC	153.3	Very large hillside mosaic site with ffridd, marshy grassland, acid grassland and heath and colliery spoil.	ST 028904	Within site
The Glyn	SINC	9.701	A valley SINC of woodland and marshy grassland.	ST023888	632 SW
Tonyrefail East	SINC	26.85	A wooded valley with marshy grassland and neutral grasslands.	ST 021880	400 SW
Mynydd Gelliwion and Gellwion Slopes	SINC	261.1	Bog mosaic SINC of forestry plantation, ffridd marshy and acid grassland, woodlands, ponds and colliery spoil.	ST 052898	Within site
Coed Castellau	SINC	32.84	The valley of the Nant Castellau and its associated habitats. This includes a fast-flowing stream and the large ancient woodland of Coed Castellau.	ST 053867	519m SE
Nant Gelliwion /Waun Castellau	SINC	40.33	The SINC is a network of wet woodland and marshy grassland habitats.	ST 046881	10m SE

Habitats of Principal Importance

SWBReC provided a list of habitats that may contain HoPI within 2km of the Site, listed below:

- dry acid-heath;
- unimproved acid grassland;
- semi-natural broadleaved woodland;

- intact hedge;
- semi-improved acid grassland;
- acid/neutral flush;
- semi-improved neutral grassland;
- standing water;
- marshy grassland;
- wet heath/acid grassland mosaic;
- basic dry heath/calcareous grassland mosaic;
- wet heath;
- blanket bog;
- fen;
- modified valley mire;
- valley mire; and
- acid/neutral inland cliff.

Ancient woodland

There is no ancient woodland recorded within the Site, the closest area is ancient semi natural woodland 300m to the south east of the Site. The following categories of ancient woodland were identified within 2km of the Site:

- Ancient Semi Natural Woodland;
- Restored Ancient Woodland Site;
- Plantation on Ancient Woodland Site; and
- Ancient Woodland Site of Unknown Category.

Protected and otherwise notable species

Badger

SEWBRc returned no records of badgers within 2km of the site within the last ten years.

Bats

At least 12 species of bat have been recorded within 10km of the Site. The bat roost records are summarised in **Table 4.4.** and **Table 4.5** lists the activity records.

Table 4.4 Summary of bat roost records within 10km of the Site

Species	Status	Number of records	Type of roost	Date of most recent record	Distance (m) and direction of nearest record from the Site
Brandt's Bat	EPS, WCA, S7, LBAP	1	Day Roost	2012	9,865 N
Brown Long-eared Bat	EPS, WCA, S7, LBAP	41	Maternity Roost / Day Roost / Hibernation	2019	1,139 N
Common Pipistrelle	EPS, WCA, S7, LBAP	83	Maternity roost / Nursery roost / Building roost / Day Roost /	2018	664 W
Daubenton's Bat	EPS, WCA, S7, LBAP	7	Hibernation / Day Roost	2019	3,284 E
Greater Horseshoe Bat	EPS, WCA, S7, LBAP, HD2	1	Hibernacula Roost	2013	9,519 SE
Lesser Horseshoe Bat	EPS, WCA, S7, LBAP, HD2	8	Maternity roost / Nursery roost / Hibernacula roost / Building roost / Day Roost /	2017	5,982 SW
Noctule	EPS, WCA, S7, LBAP	1	Building Roost	2012	8,660 SW
Myotis Bat Species	EPS, WCA, S7, LBAP	6	Maternity Roost / Day Roost	2010	5,229 NE
Natterer's bat	EPS, WCA, S7, LBAP	4	Hibernation / Maternity Roost / Building Roost	2012	2,836 W

Species	Status	Number of records	Type of roost	Date of most recent record	Distance (m) and direction of nearest record from the Site
Pipistrellus Species	EPS, WCA, S7, LBAP	83	Maternity roost/ Day Roost / Building Roost	2014	783 W
Soprano Pipistrelle	EPS, WCA, S7, LBAP	45	Maternity roost/ Day Roost / Building Roost	2017	1,139 N
Whiskered Bat	EPS, WCA, S7, LBAP	7	Building Roost	2011	4,637 NE
Unidentified Bat Species	EPS, WCA, S7, LBAP	154	Building Roost	2017	267 W

Key to 'Status' abbreviations:

EPS = European Protected Species

WCA1 = Wildlife and Countryside Act Schedule 1

S7 = Environment Act (Wales) Section 7 Species

LBAP = Local Biodiversity Action Plan Species

HD2 = Habitats Directive Annex II

Table 4.5 Summary of bat activity records within 10km of the Site

Species	Status	Number of records	Date of most recent record	Distance (m) and direction of nearest record from the Site
Brandt's Bat	EPS, WCA, S7, LBAP	1	2013	8,740 SE
Brown Long-eared Bat	EPS, WCA, S7, LBAP	43	2018	3,369 S
Common Pipistrelle	EPS, WCA, S7, LBAP	599	2018	673 NW
Daubenton's Bat	EPS, WCA, S7, LBAP	11	2014	3,050 E
Greater Horseshoe Bat	EPS, WCA, S7, LBAP, HD2	6	2017	4,470 SW

Species	Status	Number of records	Date of most recent record	Distance (m) and direction of nearest record from the Site
Lesser Horseshoe Bat	EPS, WCA, S7, LBAP, HD2	8	2018	5,655 W
Noctule	EPS, WCA, S7, LBAP	127	2018	783 E
Long-eared Bat Species	EPS, WCA, S7, LBAP	1	2013	673 N
Myotis Bat Species	EPS, WCA, S7, LBAP	118	2018	3,142 E
Nathusius Pipistrelle	EPS, WCA, S7, LBAP	11	2018	3,050 W
Natterer's bat	EPS, WCA, S7, LBAP	14	2013	5,064 NW
Nyctalus Bat Species	EPS, WCA, S7, LBAP	5	2017	5,413 W
Pipistrellus Species	EPS, WCA, S7, LBAP	159	2019	2,767 W
Serotine	EPS, WCA, S7, LBAP	7	2017	4,470 SW
Soprano Pipistrelle	EPS, WCA, S7, LBAP	495	2019	931 N
Whiskered Bat	EPS, WCA, S7, LBAP	6	2015	2,927 W
Unidentified Bat Species	EPS, WCA, S7, LBAP	133	2019	783 W

Key to 'Status' abbreviations:

EPS = European Protected Species

WCA1 = Wildlife and Countryside Act Schedule 1

S7 = Environment Act (Wales) Section 7 Species

LBAP = Local Biodiversity Action Plan Species

HD2 = Habitats Directive Annex II

Birds

A summary of notable bird species recorded within 2km of the Site is provided in **Table 4.6**. The species recorded include those associated with habitats present on the Site and therefore have the potential to utilise the Site for breeding and/or foraging.

Table 4.6 Summary of notable bird species records within 2km of the Site

Species	Status	Number of records	Date of most recent record	Distance (m) and direction of nearest record from the Site
Bullfinch	S7, BoCC Amber	8	2018	252 E
Common Crossbill	Sch.1, BoCC Green	1	2017	1,167 E
Cuckoo	S7, BoCC Red	5	2019	291 N
Dunnock	S7, BoCC Amber	2	2016	1,469 N
Golden Plover	Annex 1, S7	2	2010	Within site
House Sparrow	S7, BoCC Red	3	2016	783 E
Kestrel	S7, BoCC Amber	1	2015	657 NE
Mistle Thrush	BoCC Red	3	2018	Within site
Peregrine	Sch. 1, BoCC Green	1	2010	203 W
Red Kite	Sch. 1, S7, BoCC Green	3	2015	203 W
Redwing	Sch. 1, BoCC Red	1	2010	203 W
Reed Bunting	S7, BoCC Amber	2	2014	523 W
Skylark	S7, BoCC Red	3	2018	Within site
Snipe	BoCC Amber	2	2018	1,460 SW
Song Thrush	S7, BoCC Red	3	2011	545 E
Spotted Flycatcher	S7, BoCC Red	1	2017	1,159 S
Starling	S7, BoCC Red	1	2010	545 E
Willow Tit	S7, BoCC Red	1	2015	657 NE
Wood Warbler	S7, BoCC Red	3	2016	1,088 N
Yellowhammer	S7, BoCC Red	1	2013	1,049 SE

Key to 'Status' abbreviations:**Annex 1 = EU Birds Directive (Annex 1) Species S7 = Environment Act (Wales) Section 7 Species****Sch.1 = Wildlife and Countryside Act 1981 (as amended) Schedule 1****BoCC = Birds of Conservation Concern 4****Other Mammals**

The desk study identified records of the European Protected Species (EPS) otter, as well as the notable species, hedgehog. Details provided in **Table 4.7**.

Table 4.7 Summary of other mammal records from within 2km of the Site

Species	Status	Number of records	Date of most recent record	Distance (m) and direction of nearest record from the Site
Hedgehog	S7, LBAP	5	2017	990 N
Otter	EPS, WCA5, S7, LBAP	5	2019	974 N

Key to 'Status' abbreviations:
EPS = European Protected Species
S7 = Environment Act (Wales) Section 7 Species
WCA5 = Wildlife and Countryside Act Schedule 5 Species
LBAP = Local Biodiversity Action Plan Species

Amphibians

The desk study identified five records of amphibians within 2km of the Site. **Table 4.8** summarises the records received from SEWBRc. No records of GCN were identified during the desk study.

Table 4.8 Summary of amphibian records within 2km of the Site

Species	Status	Number of records	Date of most recent record	Distance (m) and direction of nearest record from the Site
Common Frog	WCA5, LBAP	1	2015	1,696 E
Common Toad	WCA5, S7, LBAP	2	2015	1,446 E
Palmate Newt	WCA5, LBAP	2	2016	1,024 N

Key to 'Status' abbreviations:
WCA5 = Wildlife and Countryside Act Schedule 5 Species
LBAP = Local Biodiversity Action Plan Species

Reptiles

The desk study returned two records of native reptile species, occurring on and within 2km of the Site, these are shown in **Table 4.9**.

Table 4.9 Summary of reptile records within 2km of the Site

Species	Status	Number of records	Date of most recent record	Distance (m) and direction of nearest record from the Site
Viviparous lizard	WCA5, S7, LBAP	5	2016	939 N
Grass Snake	WCA5, S7, LBAP	2	2018	647 W

Key to 'Status' abbreviations:
S7 = Environment Act (Wales) Section 7 Species
WCA5 = Wildlife and Countryside Act Schedule 5 Species
LBAP = Local Biodiversity Action Plan Species

Other species

A number of notable plant and invertebrate species records were provided from within 2km of the Site, these are detailed in **Table 4.10** and **Table 4.11**.

Table 4.10 Summary of notable invertebrate records within 2km of the Site

Species	Status	Number of records	Date of most recent record	Distance (m) and direction of nearest record from the Site
<u>Moths</u>				
Cinnabar	S7, LBAP	3	2016	835 N
<u>Butterflies</u>				
Marsh Fritillary	LBAP	32	2015	523 W
Small Heath	S7, RD1, LBAP	7	2010	Within site
Small Pearl-bordered Fritillary	S7, RD1, LBAP	7	2012	Within site

Key to 'Status' abbreviations:
RD1 (Wales) = Welsh Red Data Book listing based on IUCN guidelines
S7 = Environment Act (Wales) Section 7 Species
WCA5 = Wildlife and Countryside Act Schedule 5 Species
LBAP = Local Biodiversity Action Plan Species

Table 4.11 Summary of notable plant records within 2km of the Site

Species	Status	Number of records	Date of most recent record	Distance (m) and direction of nearest record from the Site
Bee Orchid	LBAP	1	2011	186 S
Bluebell	WCA8, LBAP	14	2018	203 W
Bog Asphodel	LI	11	2011	523 W
Bog Pimpernel	LI	13	2018	576 SE
Devil's-bit-Scabious	LI	78	2018	434 SW
Early Dog-Violet	LI	2	2018	Within site
Heath Spotted Orchid	LBAP	7	2018	602 SW
Marsh Violet	LI	37	2018	506 E
Key to 'Status' abbreviations: WCA8 = Wildlife and Countryside Act Schedule 8 Species LBAP = Local Biodiversity Action Plan Species LI = Locally Important Species				

Legally controlled species

The desk study returned records of a number of non-native, invasive plant species within 2km of the Site, detailed in **Table 4.12**.

Table 4.12 Legally controlled Species within 2km of the site

Species	Status	Number of records	Date of most recent record	Distance (m) and direction of nearest record from the Site
Himalayan Balsam	WCA9	22	2018	203 W
Japanese Knotweed	WCA9	15	2019	555 N
Montbretia	WCA9	3	2018	1,414 SW

Species	Status	Number of records	Date of most recent record	Distance (m) and direction of nearest record from the Site
Rhododendron ponticum	WCA9	2	2018	555 N
Wall Cotoneaster	WCA9	1	2018	291 N

Key to 'Status' abbreviations:
Wildlife and Countryside Act, Schedule 9 - WCA9;

Waterbodies

Three waterbodies were identified within 500m of the Site, and Pond 4 was identified during the extended Phase 1 habitat survey. Details of the waterbodies are provided in **Table 4.13** and shown on **Figure 4.4 (Annex A)**.

Table 4.13 Waterbodies within 500m of the Site

Waterbody No./Name	Description	Distance (m) and direction from the Site boundary
1	Waterbody within sheep grazed field	Within Site
2	Waterbody within sheep grazed field	Within Site
3	Waterbody within dense continuous bracken	90 N
4	Waterbody within sheep grazed field.	117 S

4.2 Extended Phase 1 habitat survey

Habitats

Overview

The Site is formed by a large hill which supports a range of habitats with a heavily sheep grazed plateau dominated by semi-improved acid grassland and poor semi-improved grassland to the southeast. These areas are frequently intersected by dry-stone walls and fencing for livestock control, with wet heath/acid grassland mosaic and blanket bog also identified in the centre of the site. Dense and scattered bracken was recorded in a large continuous block to the east of the site and frequently along the access route to the west. There is a small block of continuous scrub to the south and a parcel of scattered scrub at the start of the proposed access route to the west of site. A small area of marshy grassland was identified at the southeast of site. The majority of the wider landscape is semi-improved acid grassland and poor semi-improved grassland with the exception of an area of conifer plantation to the northeast. A summary of the key habitats recorded on-Site is

shown in **Table 4.14** shown in **Figure 4.5** and **Figure 4.6 (Annex A)**. The target notes (TN) are provided in **Annex E**.

Table 4.14 Summary of on-Site habitats

Phase 1 habitat	Section 7 habitat/LBAP?	Discussion (see Figure 4.5 and 4.6, Annex A)
Blanket bog	Yes	An area of blanket bog is present in the centre of the Site below the plateau that is fenced off from livestock and public access for protection as it is one of the designated features of the Mynydd y Glyn SINC. This habitat was boggy underfoot and dominated by purple-moor grass, scattered rush sp., mat grass, bell heather, ling heather, cross-leaved and cotton grass with scattered sphagnum moss, cuckoo flower, marsh thistle and deer grass. Round-leaved sundew was recorded in the wetter areas of the bog.
Broad-leaved woodland - plantation	No	A small strip of broad-leaved plantation woodland can be found on public land adjacent to a busy road to the west of site. This consisted of young hazel, hawthorn and field maple and is separated from the wider landscape by Collenna Road to the south.
Continuous bracken	No	Bracken is found scattered throughout the semi-improved acid grasslands on-Site and there is also a stand of continuous bracken in the east of the Site. This is located on a slope that borders semi-improved acid grassland. and wet heath.
Dense and scattered scrub	No	<p>An area of scattered scrub was identified at the start of the proposed access route at the west of site. This was relatively diverse with bracken and bramble being locally dominant in some areas. Species recorded include false-oat grass, cock's foot, hairy willowherb, rosebay willowherb, great willowherb, ribwort plantain, creeping cinquefoil, common nettle, cleaver, broad leaf dock, red shank, creeping thistle, common hemp nettle and agrimony.</p> <p>Only a small areas of dense scrub was present within the Site boundary. A small fenced area is present in the south with dominant willow scrub with some scattered hazel, sycamore, silver birch and Scot's pine saplings. The understorey is dominated by rush and bracken with bramble and some small areas resemble an attempt at mixed plantation woodland. There is also a small block of willow scrub at the northeast boundary of the Site, with scattered conifer saplings and silver birch.</p>
Hardstanding (including tracks)	No	A hardstanding track is present in the southwest southeast, used to access the site by vehicle. The A4233, a busy single carriageway road borders the western end of the proposed access road to site.
Marshy grassland	No	A small (~0.15 ha) area of marshy grassland was recorded at the southeast of the site (TN2). This contained plant species typical of regularly inundated habitat with dominant soft rush. Other species recorded include heath bedstraw, foxglove, sweet vernal, marsh thistle, tormentil and square stalked willowherb. This does not qualify as Section 7 habitat due to the low species diversity and the absence of purple moor grass, sharp-flowered

Phase 1 habitat	Section 7 habitat/LBAP?	Discussion (see Figure 4.5 and 4.6, Annex A)
Poor semi-improved grassland	No	rush or jointed rush as would be expected in “Purple moor grass and rush pastures” HoPI.
Refuse	No	Area used for refuse with exposed rock and hardcore (TN1), discarded timber, piles of manure, exposed earth and signs of regular disturbance. Likely high value for invertebrates however does not qualify as “Open Mosaic Habitat on Previously Developed Land” as it is too small (0.15 ha, minimum 0.25 required). Some vegetation was present but this was not well established, this includes Himalayan balsam, bracken, foxglove, hairy willowherb, rosebay willowherb, ling heather, soft rush, sheep’s fescue, curled dock, ivy snapdragon, common nettle and sweet vernal.
Semi-improved grassland – acid	No	The dominant habitat type found on the steep-sided plateau, and throughout the survey area, was semi-improved acid grassland. These areas were generally heavily sheep-grazed with species present including sheep’s fescue, common bent, sweet vernal, purple moor-grass, mat-grass, Yorkshire fog, sheep’s sorrel, marsh thistle, heath bedstraw and dog violet. Scattered bracken and rush sp. were also recorded frequently in this habitat. Rush sp. and purple moor-grass were found to be more prevalent in less intensively grazed areas.
Waterbodies	No	The waterbodies were visited during the extend Phase 1 habitat survey. Two ponds were within the Site boundary and only 1 held water at the time of survey, and was present within a heavily grazed grassland, frequently used by livestock with evidence of poaching at the margins. Waterbodies are shown in Figure 4.4 . The waterbodies did not have the required characteristics to qualify as Section 7 habitat.
Watercourses	No	There are dry ditches present in the east and south of the site, with some standing vegetation recorded. Although these likely hold water during the winter, plant species recorded within these was not aquatic and was in keeping with the surrounding grassland suggesting they are dry throughout much of the year. The watercourses did not have the required characteristics to qualify as Section 7 habitat.
Wet heath/acid grassland	No	Wet heath/acid grassland was recorded in the centre of the site bordering the blanket bog. This habitat was predominately semi-improved acid grassland however frequent ling heather and purple moor-grass with areas of scattered bracken and rush were also present. Wetter areas hosted sphagnum moss, reindeer moss and other moss species. Other species recorded include marsh thistle, deer grass, bird’s foot trefoil, bilberry, tormentil, heath bedstraw, bell heather and cross-leaved

Phase 1 habitat	Section 7 habitat/LBAP?	Discussion (see Figure 4.5 and 4.6, Annex A)
		heather. This habitat does not qualify as Section 7 habitat upland heath, the dwarf shrub presence is approximately 10%, less than the required 25%.

Protected and otherwise notable species

Badgers

The habitats present within the Site and wider landscape are dominated by heavily grazed semi-improved acid grassland with only small pockets plantation woodland and scrub in the southeast and west of the site. Although there is an abundance of foraging and commuting habitat for badgers, sett building opportunities are poor. No evidence of badger setts or activity was recorded on-site.

Bats

The Site provides potential foraging habitat in the form of a mosaic of semi-improved acid grassland, wet heath and blanket bog, with scrub and a single pond at the southeast of site providing additional foraging opportunities. The network of drystone walls in areas of the Site also has the potential to support commuting bats.

There are no buildings present within the Site boundary.

Dormouse

The habitats present within the Site are not considered to be typical of habitat that would support dormouse. There are no hedgerows present, the continuous scrub in the southeast of the Site and scattered scrub to the west is low in species diversity, has a sparse understorey, is not large enough in area and has no connectivity to potential off-Site habitat that could support the species. A short section of broad-leaved tree line is adjacent to the A4233 to the west of the Site, this consisted of young hazel, hawthorn and field maple but is separated from the wider landscape by Collenna Road to the south. A hazel hedgerow is adjacent to the Site in the southeast and is connected to the wider landscape however the hedgerow shows signs of being over managed and in places has become gappy reducing its suitability for dormouse.

Otter

The ditches in the south and east of the Site have moderate potential to support otter commuting during wetter months when they hold water, but have low potential for foraging, and negligible potential for resting and holt creation as the ditches are shallow with no vegetation cover.

The watercourse present off-Site to the north has moderate potential for commuting, and low potential for foraging, resting and holt creation. The watercourse off-Site east of the site that runs within a hazel coppice woodland, has high commuting potential as it holds connectivity to a number of watercourses in the wider landscape and is well covered. This stream has low potential for foraging, holt creation and resting.

The waterbodies identified within 500m of the Site that have not dried out hold moderate foraging potential for otter, given the proximity to the network of ditches in the south. No evidence of otter was recorded at the time of survey.

Water vole

The banks of the ditches present on site are heavily vegetated with rush species present and the substrate could support burrows, though these are not more than ~50cm in height and water levels are unstable. There is also limited connectivity to the wider network of ditches/watercourses and very few opportunities for above ground nesting sites.

The waterbody on Site¹⁷ is within close proximity to the ditch network however It is considered as having low potential for water vole. There is some potential for burrow creation in nearby banks amongst bracken although there remains a high level of disturbance from sheep and cattle.

Great crested newts

There are limited habitats on Site for GCN with the areas of scrub in the south and the fenced area of blanket bog and heath the only areas considered suitable to support terrestrial GCN. The intensive grazing, topography and vast open and exposed landscape make it sub-optimal for the species.

Habitat Suitability Index Assessment

The three potentially suitable GCN breeding waterbodies identified during the desk study, as well as a Pond 4 that was identified during the visits, were assessed for their habitat suitability using the HSI scoring system. At the time of survey Ponds 2 & 3 were found to be dry and therefore scoped out from further survey. The HSI scores for the remaining ponds are listed in **Table 4.16** below. The HSI assessment of the waterbodies was repeated in July 2022 to establish whether the status of the ponds has changed since the initial survey.

Table 4.16 HSI scores for ponds within 500m of the Site

Pond ID	HSI score	Pond suitability
1	0.59	Below average
2	n/a	Pond dry
3	n/a	Pond dry
4	0.68	Average

Presence/likely absence surveys

All waterbodies assessed using the HSI assessment were then subject to an eDNA survey to confirm GCN presence/likely absence. The eDNA results for the remaining ponds are listed in **Table 4.17** below.

Table 4.17 eDNA survey results

Pond ID	Date surveyed	eDNA survey result
P1	29 April 2020	Negative

¹⁷ Found at ST 03839 88816

Pond ID	Date surveyed	eDNA survey result
P4	1 May 2020	Negative

A technical meeting was held with the RCTCBC ecologist on 06 May 2022, it was agreed that if the update HSI outlined that the status of the ponds on Site had not changed since the original HSI and eDNA surveys then a repeat eDNA would not be required.

Reptiles

There is suitable habitat to support widespread British reptile species foraging, refuging and commuting in the heath, blanket bog, continuous bracken and less intensely grazed semi-improved acid grassland. The network of dry-stone walls and scattered stone on-Site provides suitable habitat for refuge and hibernation. Common lizard has been observed basking on a stone wall on the 03 April, and 01 & 02 June 2020, and flushed in the vegetation on 02 June 2020 (TN3).

Breeding birds

The Site comprises areas of semi-improved acid and poor semi-improved grassland, and a mosaic of other habitats; including scrub, wet heath and blanket bog, all of which are suitable for nesting birds.

Initial surveys have identified that the areas of semi-improved and improved grassland on the Site have the potential to support notable species such as dunnock, reed bunting and skylark. In areas of scrub notable species including linnet, mistle thrush, song thrush, cuckoo and spotted flycatcher have all been recorded and have potential to breed on the Site, all of which are Species of Principle Importance (SPI) and Birds of Conservation Concern (BoCC) Red-list species.

Five species listed on Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended) have been recorded on the Site; common crossbill, goshawk, merlin, peregrine and red kite. The woodland plantation northeast of the Site provides suitable habitat for breeding common crossbill and goshawk.

Wintering birds

The habitats within and adjacent to the Site have the potential to support migratory/wintering raptors waders, wildfowl and other non-breeding bird species.

Initial survey results and desk-based review has identified records of notable species including merlin, goshawk, lapwing, golden plover and snipe, all of which have the potential to use the Site during non-breeding periods.

Other species

Other notable species highlighted by the desk study may occur on the Site. The only potentially suitable habitat for hedgehog is the scrub in the south and east of the Site, however the species is scarcely found in uplands and are commonly associated with a mosaic of hedgerows woodland and grassland opposed to the vast open grassland habitat on-Site. The waterbody on Site holds the potential to support common toad breeding, and the adjacent scrub and less heavily grazed areas could provide terrestrial habitat.

Habitats on the Site, including the grassland, continuous stands of bracken and blanket bog provides suitable habitat to support generalist moth and butterfly species. Notable invertebrates identified within 2km of the Site during the desk study includes small pearl-bordered fritillary and

small heath butterflies and cinnabar moth. The areas of continuous bracken habitat identified, particularly in the centre of the Site resembles suitable habitat for these species, with habitat occurring on south facing sunny slopes. The desk study returned 32 records of marsh fritillary within 2km of the site, the closest being 523m to the east. The majority of the Site is heavily grazed with short sward acid grassland unsuitable to support marsh fritillary, a species commonly associated with calcareous grassland. The damper habitats within the Site, including the blanket bog and wet heath could provide sub-optimal habitat for this species, however no devil's bit scabious or field scabious was identified during the survey, which are the main food plants of the species.

Of the notable plant species identified in the desk study, only dog violet was identified extended Phase 1 habitat survey.

Legally controlled species

Himalayan Balsam was recorded at **TN1**. As this plant is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), allowing "*Uncontrolled spread and proliferation of invasive species*" may result in a potential offence being committed. Should works require the disturbance of an area containing Himalayan Balsam additional targeted mitigation may be required to ensure it is not allowed to spread.

5. Summary and Conclusions

The desk study and extended Phase 1 habitat survey of the Site have highlighted the presence of two SACs within 10km of the Site, two SSSIs and eight SINCs within a 2km radius. The closest SAC is Blackmill Woodlands and is approximately 8.4km from the Site and designated for its old sessile oak woods, a habitat that is not found on or directly adjacent to the Site. Cardiff Beech Woods SAC is approximately 8.8km south east of the Site and is designated as one of the largest concentrations of *Asperulo-Fagetum* beech forest in Wales. This habitat occurs on calcareous soils and not found on or directly adjacent to the Site.

Nant Gelliwion Woodland SSSI is approximately 1.1km south east of the Site and is designated for its mixed deciduous woodland and stands of sessile oak. This habitat type does not occur within or adjacent to the Site. Rhos Tonyrefail SSSI is approximately 5m from the Site and is designated for its marshy grassland, acid flush, species-rich neutral grassland, acid grassland, wet heath and blanket mire, as well as its population of marsh fritillary butterflies. Similar habitats have been identified on-Site, and there is potential for marsh fritillary to be supported, though no field scabious or devil's bit scabious was identified during the visit.

There are eight SINCs within 2km of the Site; with one, Mynydd y Glyn, Trebanog Slopes and Mynydd Gelliwion and Gelliwion Slopes, lying within or directly adjacent to the Site boundary. Mynydd y Glyn is designated as an area of upland peat bog, as identified during the extended Phase 1 walkover survey. Mynydd Gelliwion and Gelliwion Slopes is designated as a bog mosaic with forestry plantation, ffridd marshy and acid grassland and Trebanog Slopes is designated as a hillside mosaic site with ffridd, marshy grassland, acid grassland and heath. The remaining sites are designated for their grassland and/or woodland habitats.

A number of HoPIs were identified in the desk study within a 2km radius of the Site, within the Site blanket bog was recorded as being a Section 7 HoPI.

The desk study and field survey identified the potential for a number of legally protected and notable species to utilise the habitats within the Site. These are:

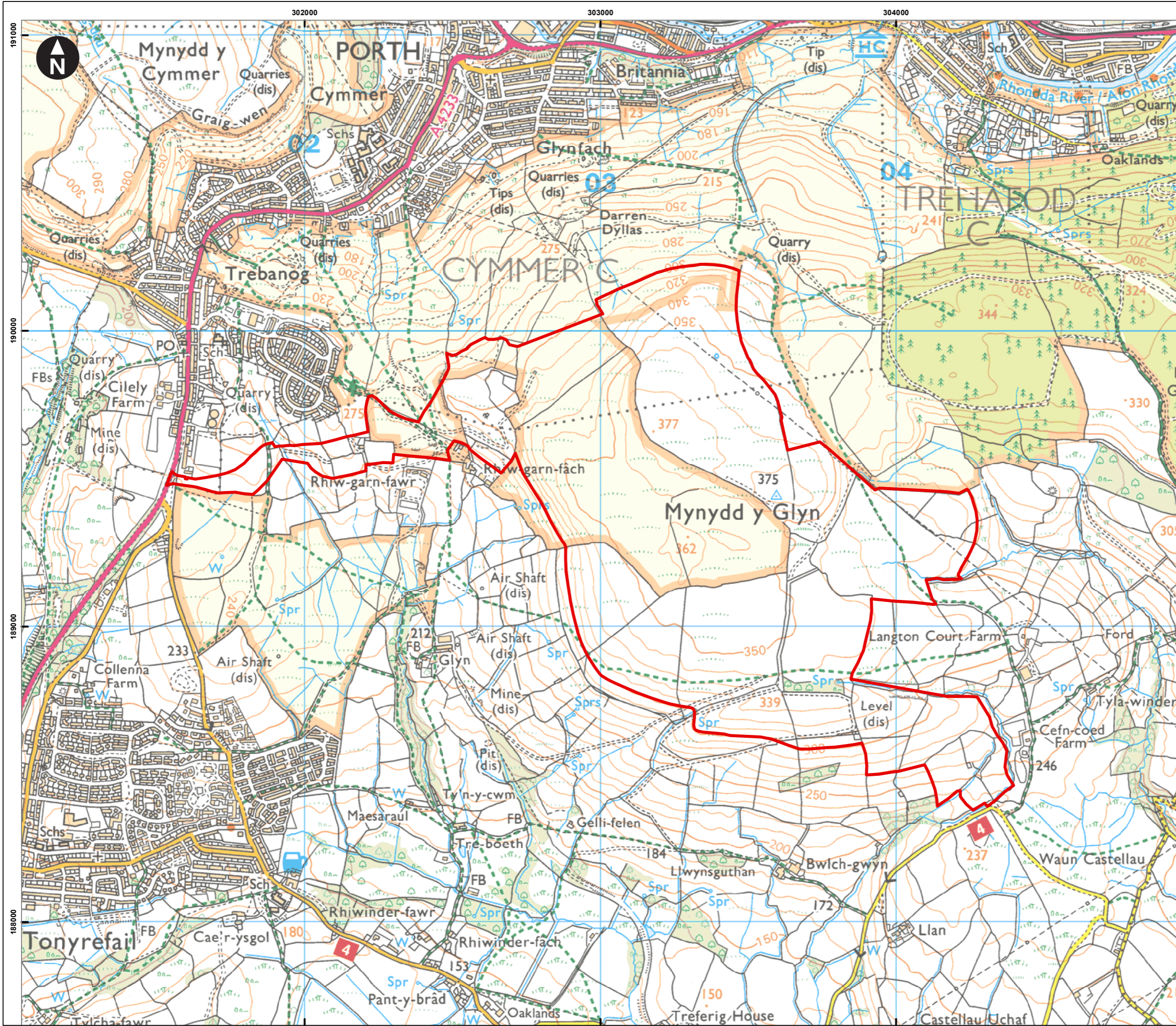
- Badger – potentially foraging and commuting on-Site;
- Bats – potentially roosting, foraging and commuting on-Site;
- Otter – potentially commuting, resting and holt building within 250m of the Site;
- Birds – including Schedule 1 and notable species, potentially nesting and foraging on-Site;
- Reptiles – potentially foraging, commuting, refuging and hibernating on-Site; and
- Terrestrial invertebrates – potentially undergoing their full life cycle on -Site; and
- Other notable species – hedgehog and toad – potentially foraging, commuting and occupying habitats on-Site.

Himalayan Balsam was recorded on site which is a Schedule 9 controlled species. Should works require the disturbance of an area containing Himalayan Balsam, additional targeted mitigation may be required to ensure it is not allowed to spread.

Annex A

Figures

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Key
Site boundary



Scale at A3: 1:12,500
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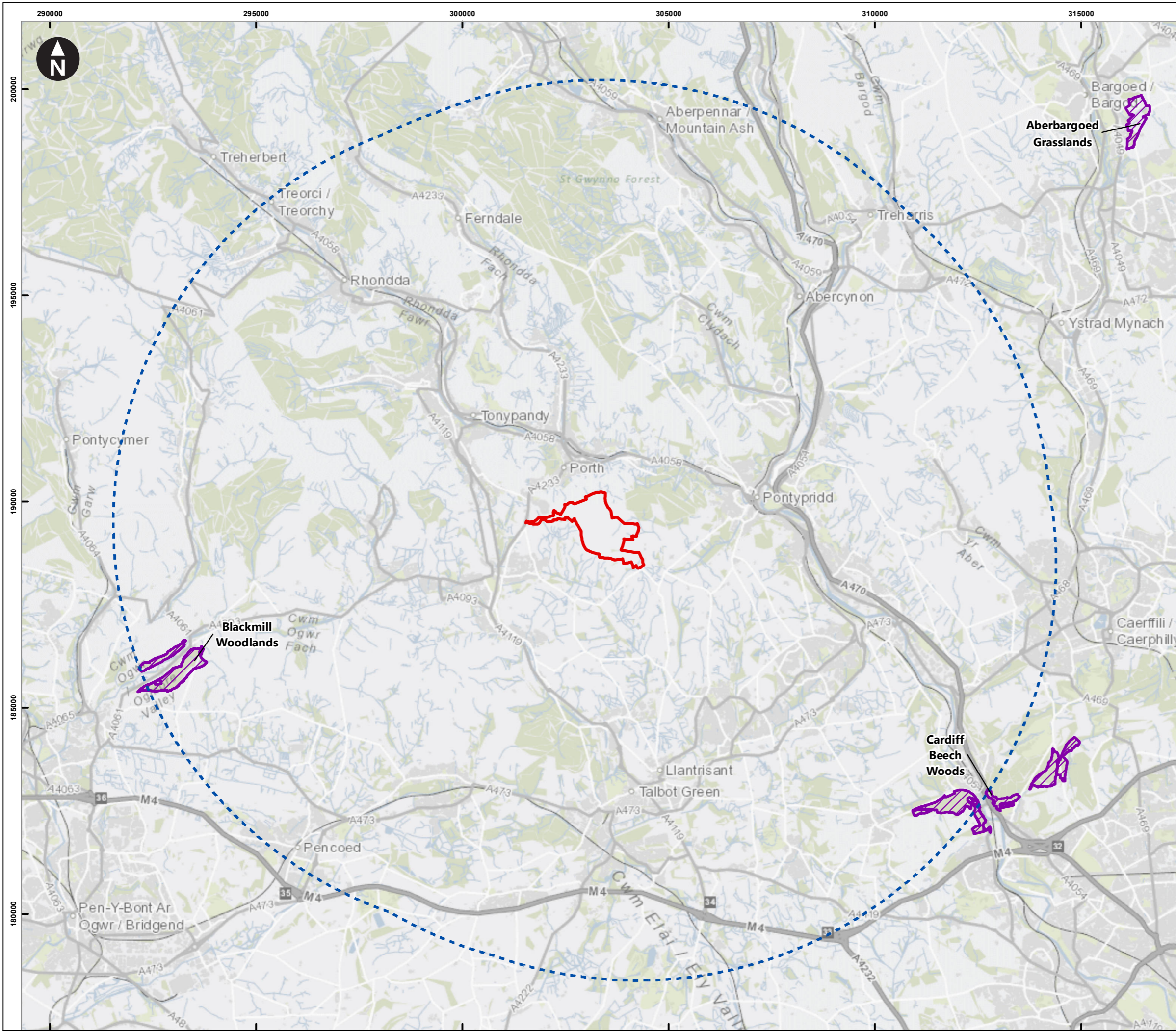
Pennant Walters
Mynydd y Glyn Wind Farm
Preliminary Ecological Appraisal Report

Figure 1.1
Site boundary

October 2022



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Key

- Site boundary
- 10km search area

0 1,000 2,000 3,000 4,000 5,000 m


Scale at A3: 1:90,000

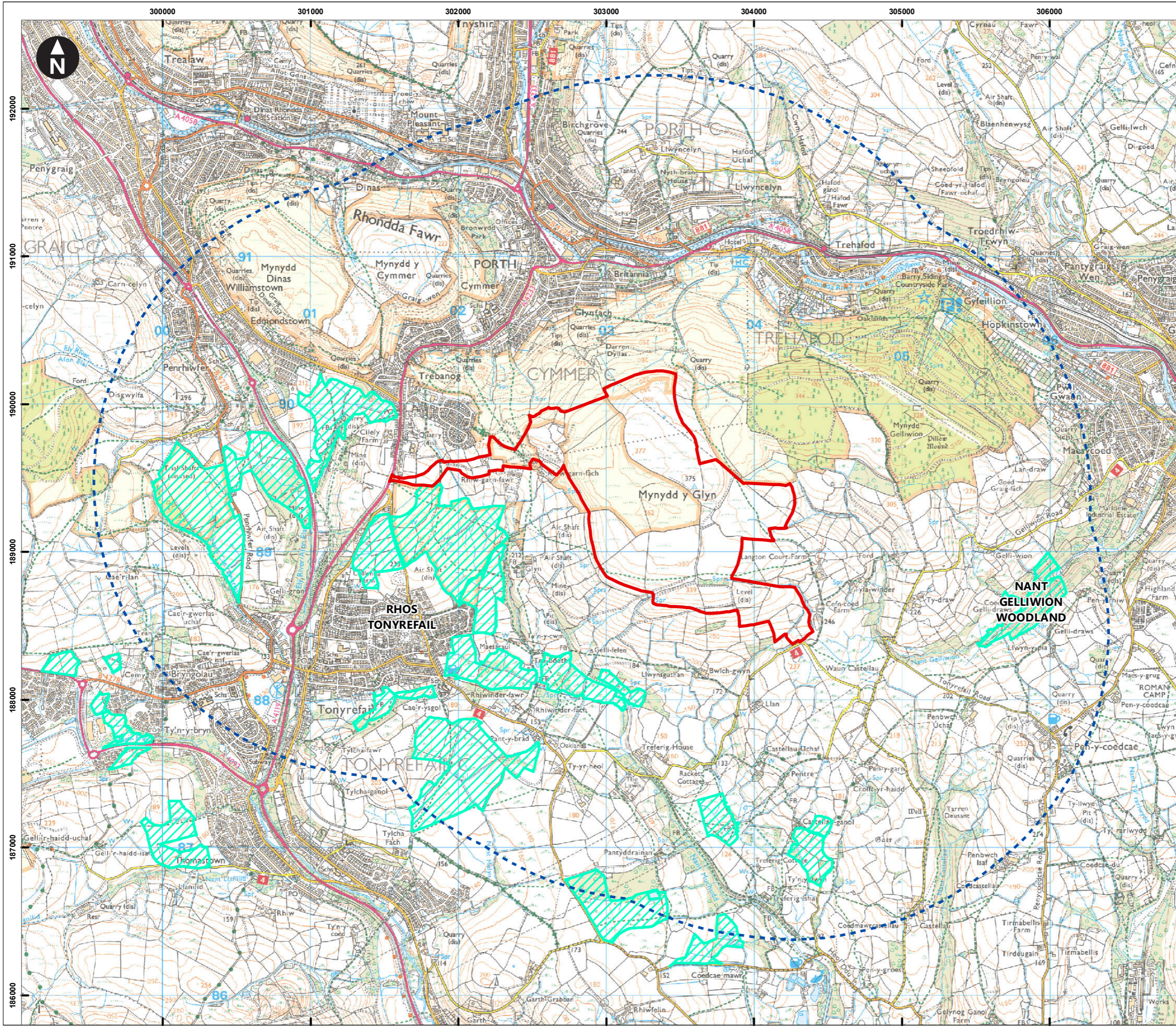
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 Mynydd y Glyn Wind Farm
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Figure 4.1
 Statutory designated biodiversity sites of international importance within 10km of the Site

October 2022





Key

- Site boundary
- 2km search area
- Sites of Special Scientific Interest (SSSI)

0 500 1,000 m

Scale at A3: 1:25,000

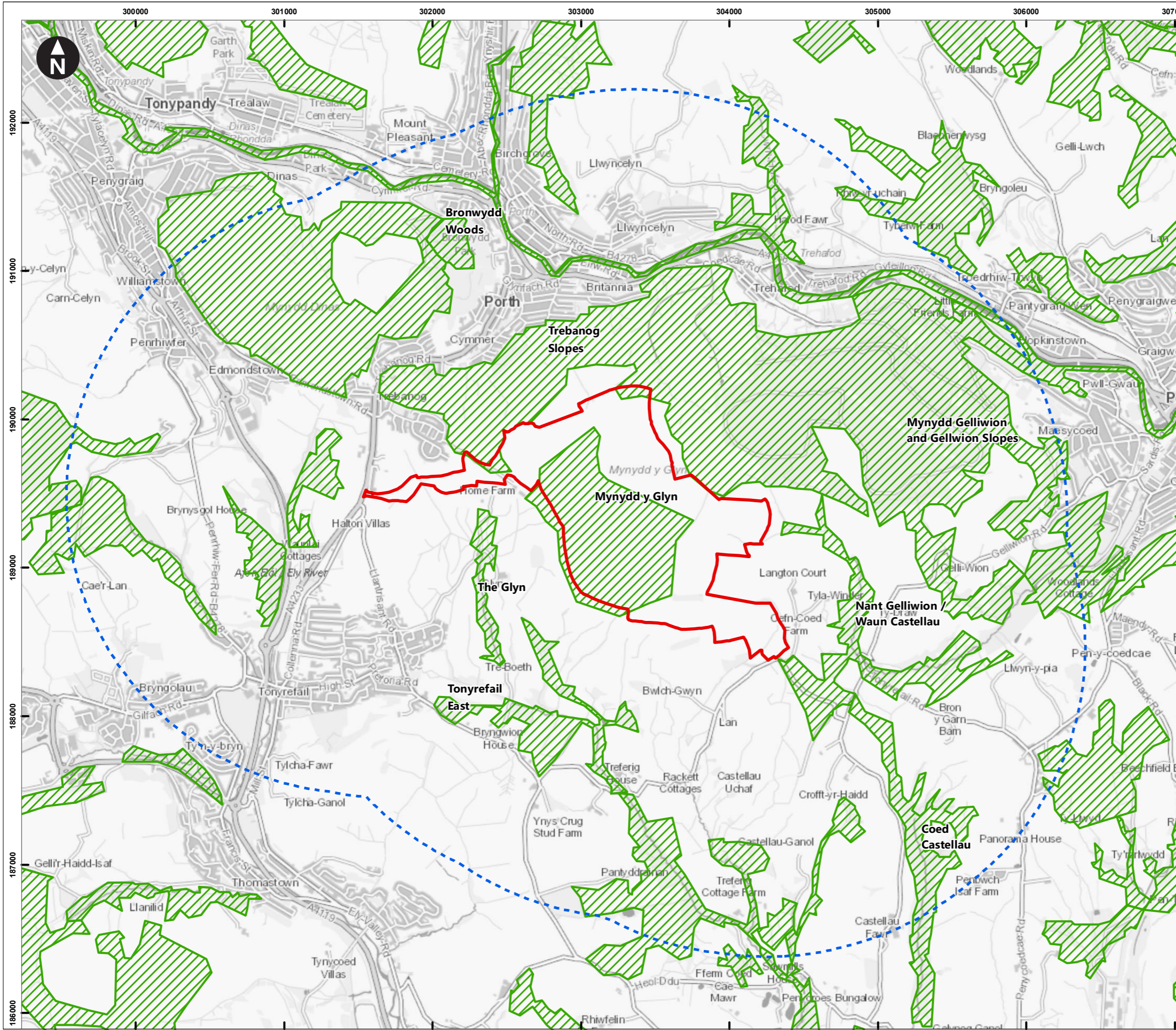
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Preliminary Ecological Appraisal Report

Figure 4.2
Sites with national statutory designation
for biodiversity conservation

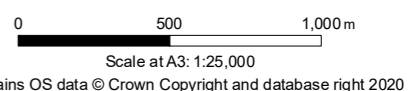


October 2022



Key

- Site boundary
- 2km search area
- Sites of Importance for Nature Conservation (SINC)



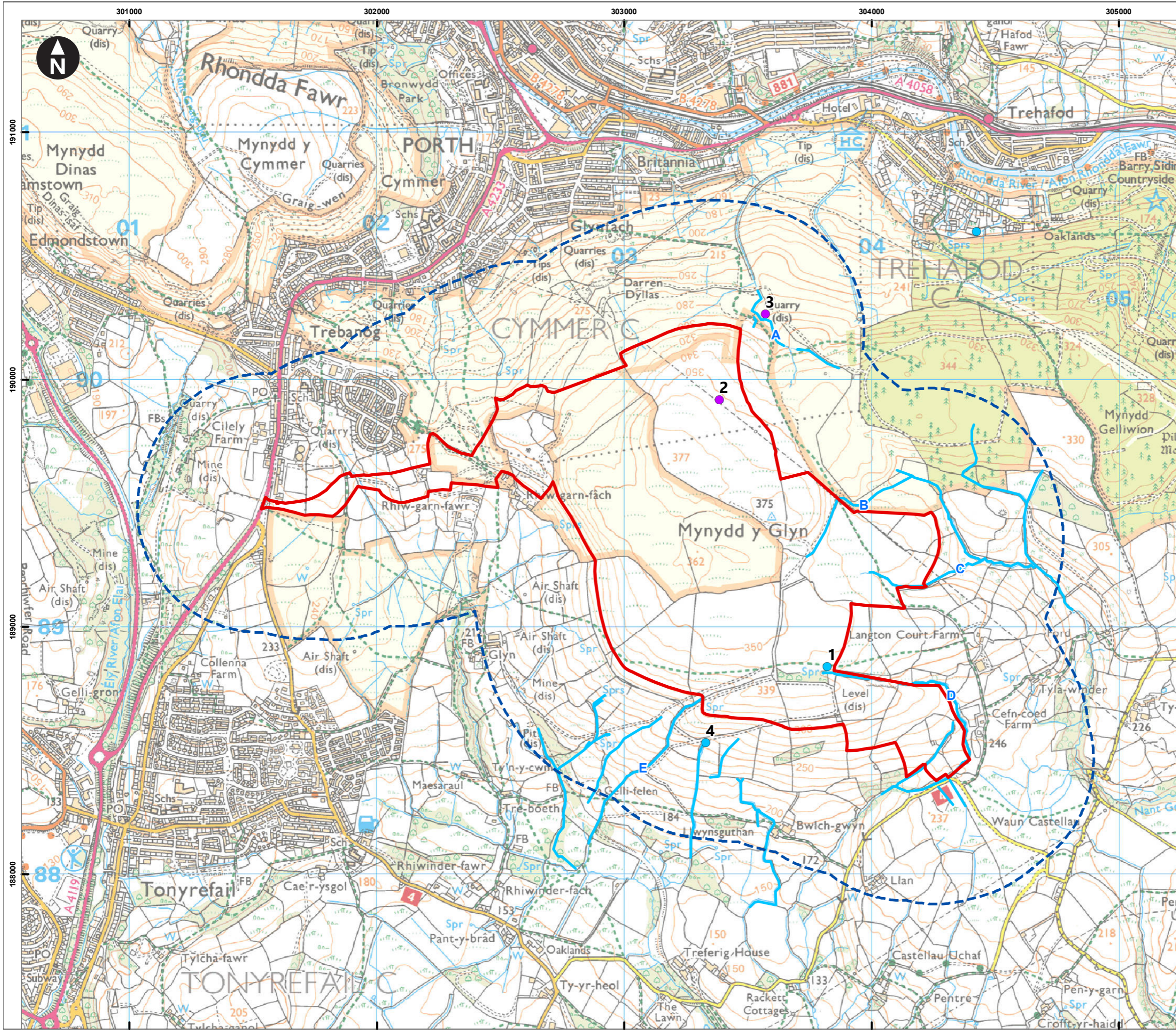
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Figure 4.3
 Non-statutory designated biodiversity sites within 2km of the Site

October 2022



H:\Projects\42864 Mynydd y Glyn\Deliver Stage\Design_Technical\Drawings\GIS\Workspaces\42864-WOOD-XX-XX-FG-OE-0015_S2_P01.5.mxd Originator: jacqui.parkin



Key

- Site boundary
- 500m search area
- Waterbody
- Dry pond
- Watercourse

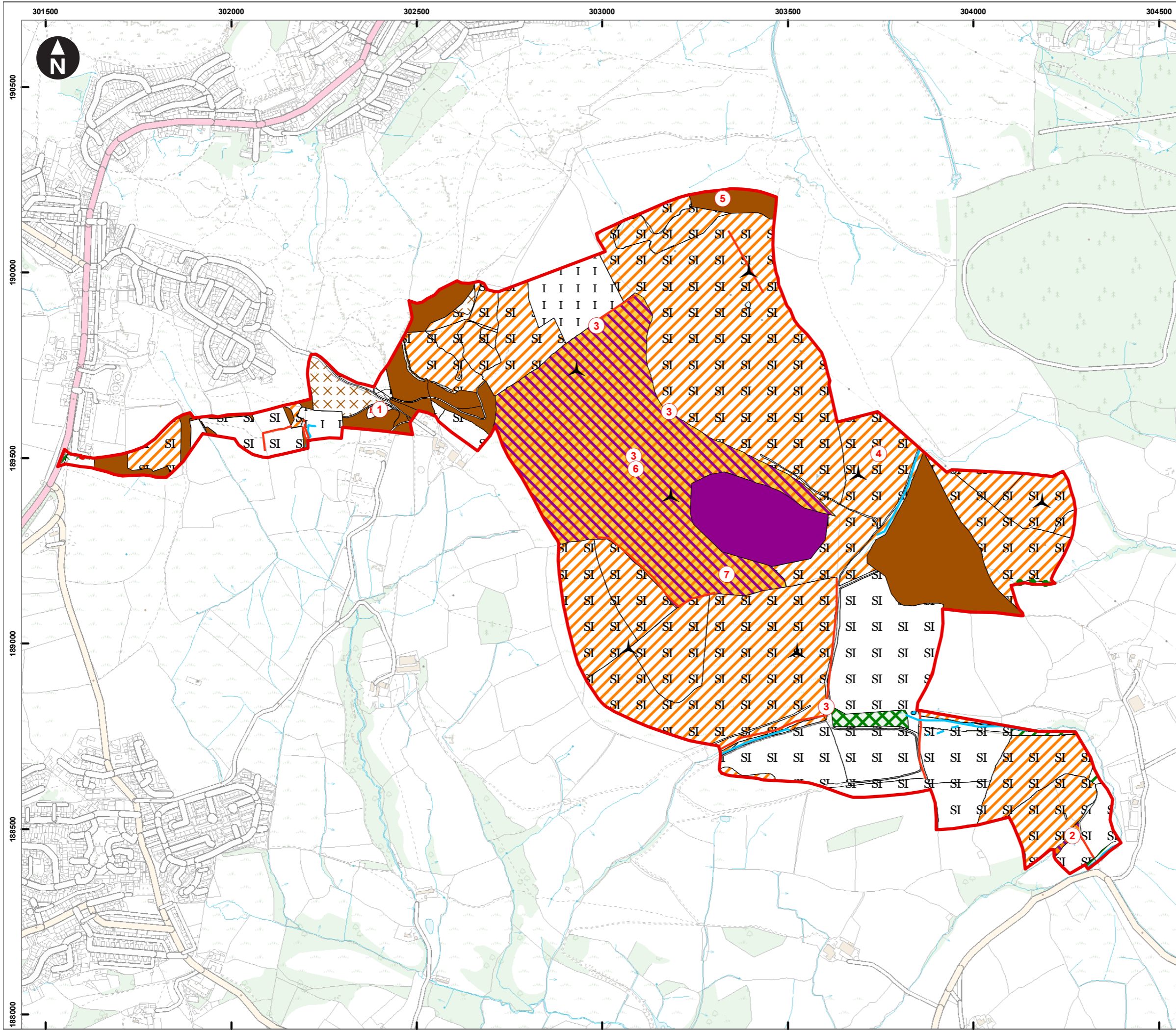
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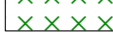

















Figure 4.4
Water bodies identified within 500m of the site

October 2022





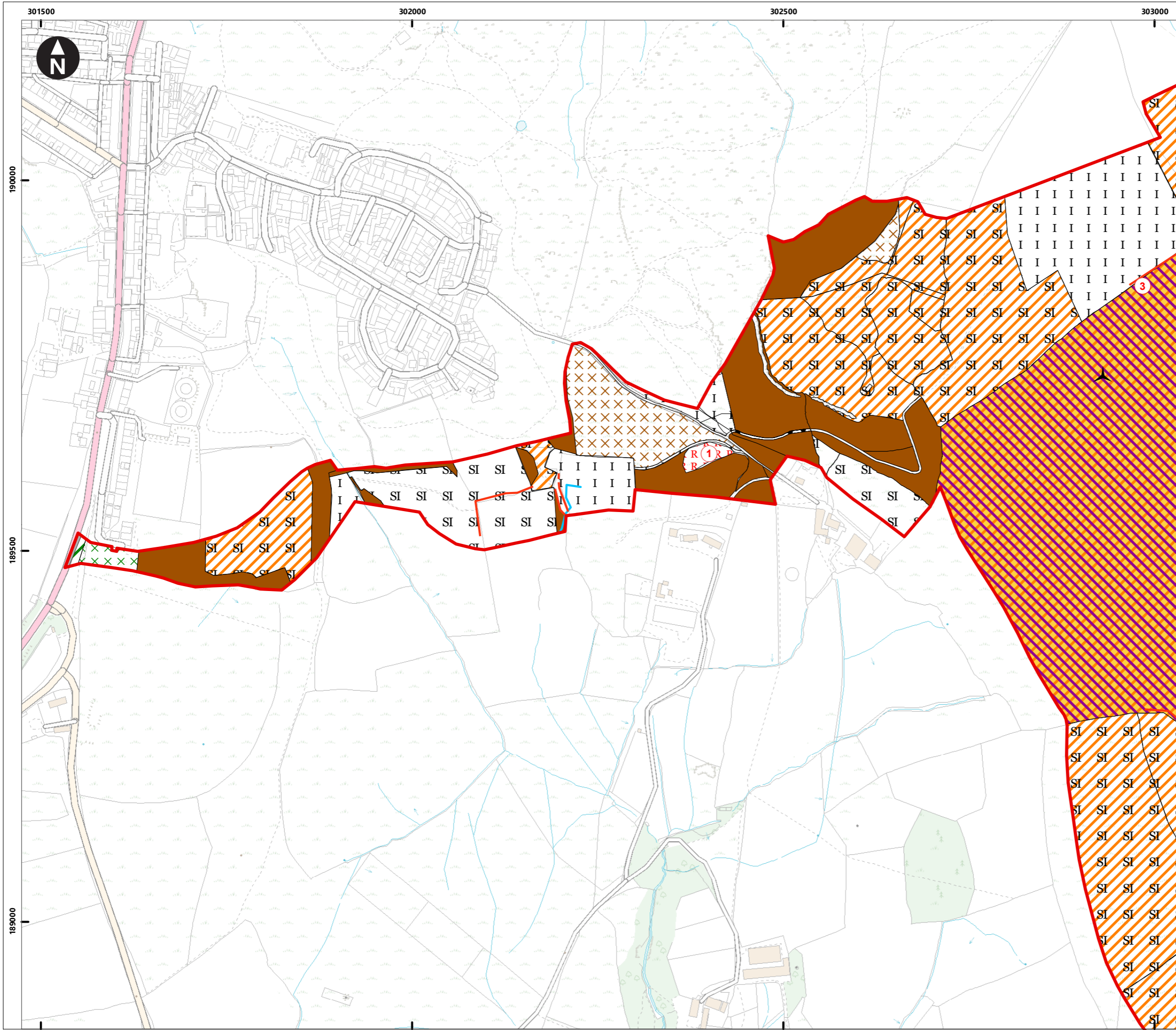
Key

-  Site boundary
-  Proposed turbine location
-  Broadleaved woodland - plantation
-  Scrub - dense/continuous
-  Scrub - scattered
-  Acid grassland - semi-improved
-  Improved grassland
-  Marsh/marshy grassland
-  B6: Poor semi-improved grassland
-  Continuous Bracken
-  Scattered Bracken
-  Wet heath/acid grassland
-  Blanket bog
-  Standing water
-  Refuse tip
-  Bare ground
-  Hardstanding
-  Parkland and scattered trees - broad-leaved
-  Running water
-  Wall
-  Dry ditch
-  Target note

0 100 200 300 400 500 600 m
Scale at A3: 1:10,000
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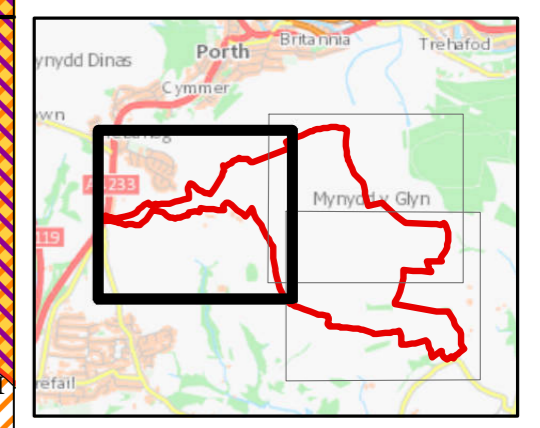
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Figure 4.5
Extended Phase 1 habitat map



Key

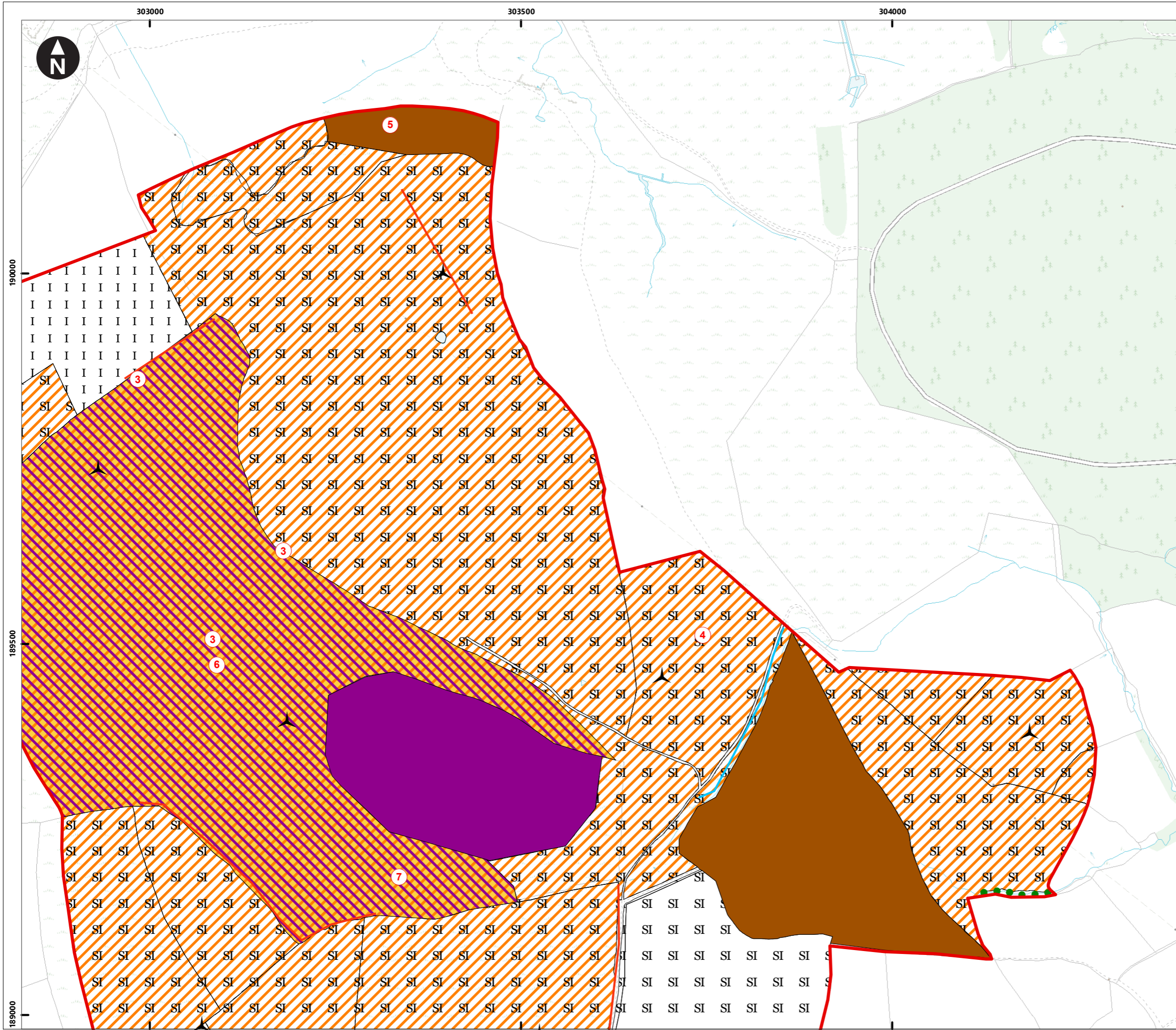
- Site boundary
- Proposed turbine location
- Broadleaved woodland - plantation
- Scrub - scattered
- Acid grassland - semi-improved
- Improved grassland
- B6: Poor semi-improved grassland
- Continuous Bracken
- Scattered Bracken
- Wet heath/acid grassland
- Refuse tip
- Bare ground
- Hardstanding
- Running water
- Wall
- Target note



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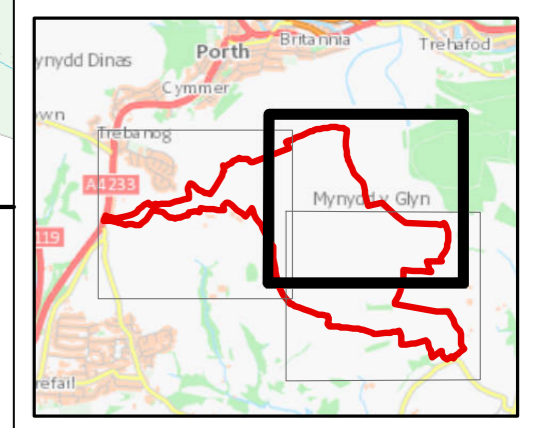
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Figure 4.6
Extended Phase 1 Habitat Plan - Detailed
 Page 1 of 3



Key

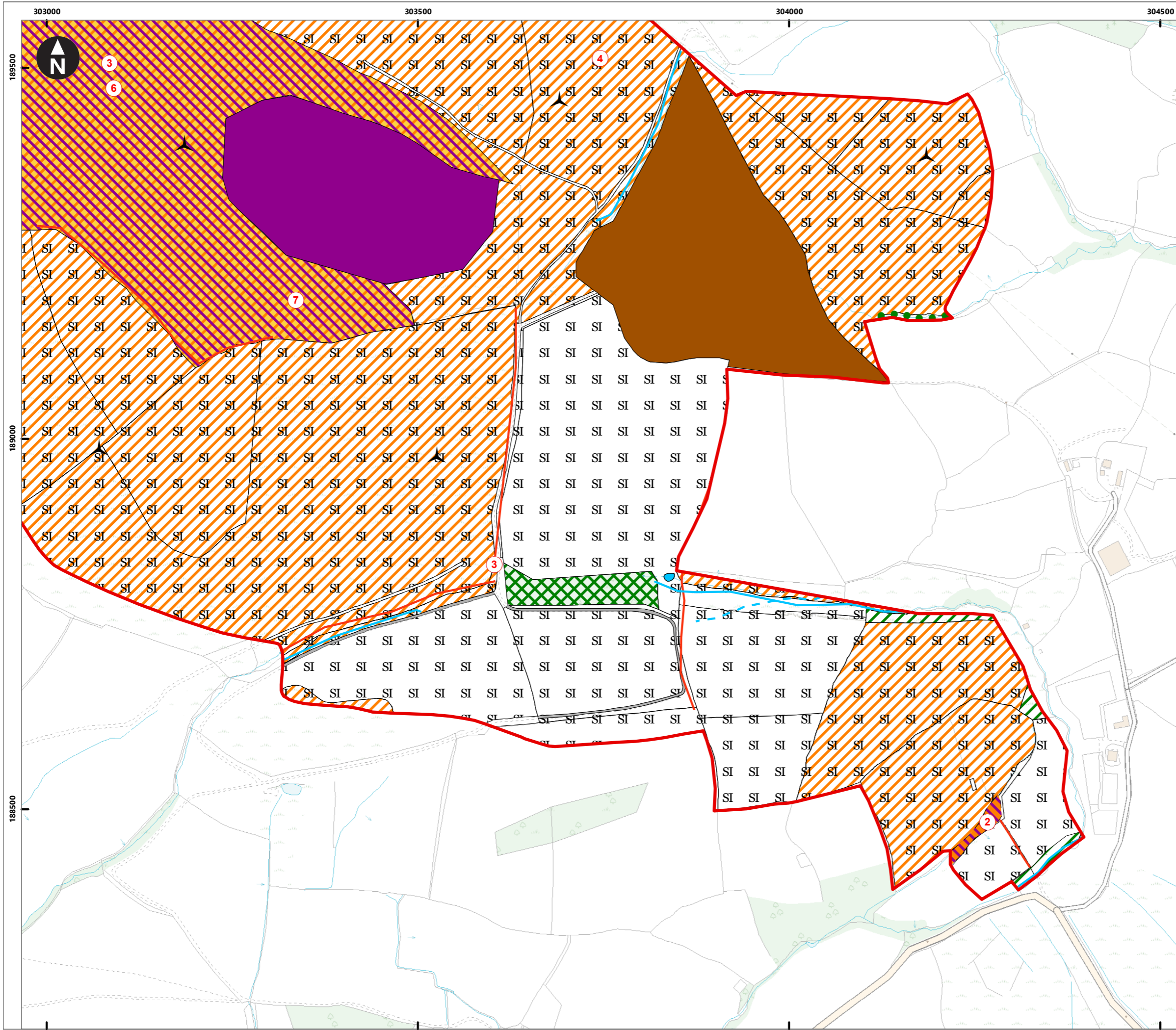
- Site boundary
- Proposed turbine location
- Acid grassland - semi-improved
- Improved grassland
- B6: Poor semi-improved grassland
- Continuous Bracken
- Wet heath/acid grassland
- Blanket bog
- Parkland and scattered trees - broad-leaved
- Running water
- Wall
- Target note



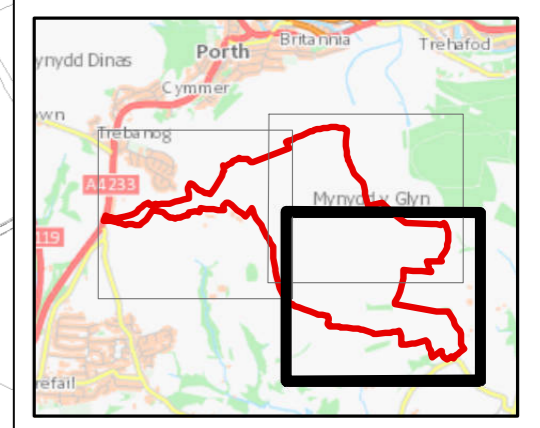
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Figure 4.6
Extended Phase 1 Habitat Plan - Detailed
 Page 2 of 3



- Key
- Site boundary
 - Proposed turbine location
 - Broadleaved woodland - plantation
 - Scrub - dense/continuous
 - Acid grassland - semi-improved
 - Improved grassland
 - Marsh/marshy grassland
 - B6: Poor semi-improved grassland
 - Continuous Bracken
 - Wet heath/acid orassland
 - Blanket bog
 - Standing water
 - Hardstanding
 - Parkland and scattered trees - broad-leaved
 - Running water
 - Wall
 - Dry ditch
 - Target note



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 Preliminary Ecological Appraisal Report

Figure 4.6
Extended Phase 1 Habitat Plan - Detailed
 Page 3 of 3

Annex B

Updated Phase 1 habitat survey 2022

Following changes to the boundary of the Proposed Development and the requirement to survey the proposed access route to the west of the Site and grid connection corridor within the Site to the southeast, an updated Phase 1 habitat survey was undertaken. This also established any changes in habitats previously identified during 2020 surveys.

5.1 Amended habitats

Surveys were completed on 12 August 2022 and 24 August 2022 by a suitably trained ecologist¹⁸, during these surveys a number of updates were made. A summary of all amended habitat types along with rationale is provided in **Table B.1** below.

Table B.1 Amended habitats recorded on Mynydd y Glyn

TN	NGR	Previous habitat	New habitat	Justification
4	ST 04268 88484	Blanket bog	Semi-improved acid grassland	This area of grassland was in keeping with the semi-improved acid grassland found throughout the Site and did not have flora typical of blanket bog such as sphagnum moss and cotton grass.
5	ST 03325 90200	Wet heath/acid grassland	Continuous bracken and semi-improved acid grassland	This area was separated into two distinct habitat types. Continuous bracken in an area that was dominated by bracken with little other species. The remaining area was changed to semi-improved grassland as it was in keeping with the grassland prevalent throughout the site and directly to the south.
6	ST 03090 89473	Dry heath/acid grassland	Wet heath/acid grassland	Cross leaved heather is typically not found in dry heath and has a preference for more wet conditions. The presence of this and other species typical of more wet environments such as deer grass and purple moor grass suggest that wet heath/acid grassland is a closer fit for this habitat.
7	ST 03343 89209	Blanket bog	Wet heath/acid grassland	This area of grassland was in keeping with the larger area of wet heath/acid grassland to the west and did not have flora typical of blanket bog such as sphagnum moss and cotton grass.

¹⁸ Gary Lindsay – Senior Ecological Consultant

Annex C

Legislation

All wild mammals (including rabbits and foxes)

Under the *Wild Mammals (Protection) Act 1996* it is an offence intentionally to cause unnecessary suffering to any wild mammal.

Badger

The Protection of Badgers Act 1992 makes it an offence to:

- wilfully kill, injure or take a badger;
- attempt to kill, injure or take a badger; or
- cruelly ill-treat a badger.

It is also an offence to interfere with a badger set by:

- damaging a badger sett or any part of it;
- destroying a badger sett, obstructing access to or any entrance of a badger sett, disturbing a badger when it is occupying a badger sett; or
- intending to do any of those things or being reckless as to whether his actions would have any of those consequences.

Bats

All British bat species are listed in Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and Schedule 2 of *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*. They are afforded full protection under Section 9(4) of the Act and Regulation 41 of the Regulations. These make it an offence, *inter alia*, to:

- deliberately capture, injure or kill a bat;
- deliberately disturb a bat (this applies anywhere, not just at its roost), in particular in such a way as to be likely to:
 - ▶ impair their ability to survive, breed or reproduce, or rear or nurture their young; and
 - ▶ impair their ability to hibernate or migrate.
- affect significantly the local distribution or abundance of that bat species;
- damage or destroy a breeding site or resting place of any bat;
- intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection; or
- intentionally or recklessly obstruct access to any place that a bat uses for shelter or protection (this is taken to mean all bat roosts whether bats are present or not).

Dormouse

Dormouse is listed in Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and Schedule 2 of *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations*

2019. This species is afforded full protection under Section 9(4) of the Act and Regulation 41 of the Regulations. These make it an offence, *inter alia*, to:

- deliberately capture, injure or kill any such animal;
- deliberately disturb any such animal, in particular in such a way as to be likely to:
 - ▶ impair their ability to survive, breed or reproduce, or rear or nurture their young;
 - ▶ impair their ability to hibernate or migrate; and
 - ▶ affect significantly the local distribution or abundance of that species.
- damage or destroy a breeding site or resting place of any such animal;
- intentionally or recklessly disturb any of these animals while it is occupying a structure or place that it uses for shelter or protection; or
- intentionally or recklessly obstruct access to any place that any of these animals uses for shelter or protection.

Great crested newt

The great crested newt is listed in Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and Schedule 2 of *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*. It is afforded protection under Section 9(4) of the Act and Regulation 41 of the Regulations. These make it an offence, *inter alia*, to:

- deliberately capture, injure or kill any such newt;
- deliberately disturb any such newt, in particular in such a way as to be likely to:
 - ▶ impair their ability to survive, breed or reproduce, or rear or nurture their young;
 - ▶ impair their ability to hibernate or migrate; and
 - ▶ affect significantly the local distribution or abundance of that species.
- deliberately take or destroy the eggs of such a newt;
- damage or destroy a breeding site or resting place of any such newt;
- intentionally or recklessly disturb any such newt while it is occupying a structure or place that it uses for shelter or protection; or
- intentionally or recklessly obstruct access to any place that any such newt uses for shelter or protection.

This relates to both the aquatic and terrestrial habitat they occupy. The legislation applies to all life stages of this species.

Reptiles

The four widespread¹⁹ species of reptile that are native to Britain, namely common or viviparous lizard (*Zootoca (Lacerta) vivipara*), slow worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix natrix (Naturix helvetica)*), are listed in Schedule 5 of the *Wildlife and Countryside Act*

¹⁹ The other native species of British reptile (sand lizard and smooth snake) receive a higher level of protection in England and Wales under the *Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*. However, the distribution of these species is restricted to only a very few sites. All marine turtles (*Cheloniidae* and *Dermochelyidae*) are also protected.

1981 (as amended) and are afforded limited protection under Section 9 of this Act. This makes it an offence, *inter alia*, to:

- intentionally kill or injure any of these species.

Birds

With certain exceptions²⁰, all wild birds, their nests and eggs are protected by section 1 of the *Wildlife and Countryside Act 1981* (as amended). Therefore, it is an offence, *inter alia*, to:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; or
- intentionally take or destroy the egg of any wild bird.

These offences do not apply to hunting of birds listed in Schedule 2 of the Act subject to various controls.

Bird species listed on Schedule 1 of the Act receive further protection, thus for these species it is also an offence to:

- intentionally or recklessly disturb any bird while it is nest building, or is at a nest containing eggs or young; or
- intentionally or recklessly disturb the dependent young of any such bird.

For golden eagle, white-tailed eagle and osprey, it is also an offence to:

- take, damage or destroy the nest of these species (this applies at any time, not only when the nest is in use or being built).

²⁰ Some species, such as game birds, are exempt in certain circumstances.

Annex D

Species Scientific Names

Table B.1 Species Scientific Names

Species	Scientific Name
Adder	<i>Vipera berus</i>
Alder	<i>Frangula alnus</i>
Ash	<i>Fraxinus sp.</i>
Badger	<i>Meles meles</i>
Bee Orchid	<i>Ophrys apifera</i>
Beech	<i>Fagus sylvatica</i>
Bell heather	<i>Erica cinerea</i>
Birch	<i>Betula sp.</i>
Bird's foot trefoil	<i>Lotus corniculatus</i>
Bluebell	<i>Hyacinthoides non-scripta</i>
Bog Asphodel	<i>Narthecium ossifragum</i>
Bog Pimpernel	<i>Potamogeton polygonifolius</i>
Bracken	<i>Pteridium</i>
Bramble	<i>Rubus sp.</i>
Brandt's Bat	<i>Myotis brandti</i>
Brown long-eared bat	<i>Plecotus auritus</i>
Bullfinch	<i>Pyrrhula pyrrhula</i>
Cherry Laurel	<i>Prunus laurocerasus</i>
Cinnabar	<i>Tyria jacobaeae</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common Bent	<i>Agrostis capillaris</i>
Common Crossbill	<i>Loxia curvirostra</i>
Common Frog	<i>Rana temporaria</i>
Common Nettle	<i>Urtica dioica</i>
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>

Species	Scientific Name
Common Toad	<i>Bufo bufo</i>
Conifer	<i>Pinophyta sp.</i>
Creeping Bent	<i>Agrostis stolonifera</i>
Creeping Buttercup	<i>Ranunculus repens</i>
Creeping Thistle	<i>Cirsium arvense</i>
Cuckoo	<i>Cuculus canorus</i>
Cuckoo Flower	<i>Cardamine pratensis</i>
Daisy	<i>Bellis perennis</i>
Dandelion	<i>Taraxacum sp.</i>
Daubenton's Bat	<i>Myotis daubentonii</i>
Devil's-bit-Scabious	<i>Succisa pratensis</i>
Dog Violet	<i>Viola canina</i>
Dormouse	<i>Muscardinus avellanarius</i>
Dunnock	<i>Prunella modularis</i>
Early Hair Grass	<i>Aira praecox</i>
Giant Hogweed	<i>Heracleum mantegazzianum</i>
Goat Willow	<i>Salix caprea</i>
Golden Plover	<i>Pluvialis apricaria</i>
Gorse	<i>Ulex sp.</i>
Goshawk	<i>Accipiter gentilis</i>
Grass Snake	<i>Natrix natrix</i>
Great Crested Newt	<i>Triturus cristatus</i>
Greater Horseshoe Bat	<i>Rhinolophus ferrumequinum</i>
Greater Willowherb	<i>Epilobium hirsutum</i>
Hare	<i>Lepus europaeus</i>
Hawthorn	<i>Crataegus sp.</i>
Hazel	<i>Corylus sp.</i>

Species	Scientific Name
Heath Spotted Orchid	<i>Dactylorhiza maculata</i>
Heath Rush	<i>Juncus squarrosus</i>
Heather	<i>Calluna sp.</i>
Hedgehog	<i>Erinaceus europaeus</i>
Himalayan Balsam	<i>Impatiens glandulifera</i>
Himalayan Cotoneaster	<i>Cotoneaster simonsii</i>
Himalayan Honeysuckle	<i>Leycesteria formosa</i>
Honeysuckle	<i>Lonicera fragrantissim</i>
Japanese knotweed	<i>Reynoutria japonica</i>
Kestrel	<i>Falco tinnunculus</i>
Kingfisher	<i>Alcedo atthis</i>
Knot Grass	<i>Polygonum sp.</i>
Lapwing	<i>Vanellus vanellus</i>
Lesser Horseshoe Bat	<i>Rhinolophus hipposideros</i>
Linnet	<i>Linaria cannabina</i>
Ling heather	<i>Calluna vulgaris</i>
Marsh Fritillary	<i>Euphydryas aurinia</i>
Marsh Thistle	<i>Cirsium palustre</i>
Marsh Violet	<i>Viola palustris</i>
Mat-Grass	<i>Nardus stricta</i>
Merlin	<i>Falco columbarius</i>
Mistle Thrush	<i>Turdus viscivorus</i>
Montbretia	<i>Crocsmia</i>
Natterer's bat	<i>Myotis nattereri</i>
Noctule	<i>Nyctalus noctula</i>
Oak	<i>Quercus sp.</i>
Otter	<i>Lutra lutra</i>

Species	Scientific Name
Palmate Newt	<i>Lissotriton helveticus</i>
Pearl-bordered Fritillary	<i>Boloria euphrosyne</i>
Peregrine	<i>Falco peregrinus</i>
Perennial Rye	<i>Lolium perenne</i>
Purple Moor Grass	<i>Molinia caerulea</i>
Red Fescue	<i>Festuca rubra</i>
Red Kite	<i>Milvus milvus</i>
Redwing	<i>Turdus iliacus</i>
Reed Bunting	<i>Emberiza schoeniclus</i>
Reindeer moss	<i>Cladonia Stellaris</i>
Rhododendron ponticum	<i>Rhododendron ponticum</i>
Ribwort Plantain	<i>Plantago lanceolata</i>
Rowan	<i>Sorbus sp.</i>
Rush	<i>Juncaceae sp.</i>
Sallow	<i>Cirrhia icteritia</i>
Scots Pine	<i>Pinus sylvestris</i>
Sedge sp.	<i>Cyperaceae sp.</i>
September Thorn	<i>Ennomos erosaria</i>
Serotine	<i>Eptesicus serotinus</i>
Shaded Broad-bar	<i>Scotopteryx chenopodiata</i>
Sheep's Fescue	<i>Festuca ovina</i>
Sheep's' Sorrel	<i>Rumex acetosella</i>
Silver Birch	<i>Betula pendula</i>
Skylark	<i>Alauda arvensis</i>
Slow worm	<i>Anguis fragilis</i>
Small Heath	<i>Coenonympha pamphilus</i>

Species	Scientific Name
Small Pearl-bordered Fritillary	<i>Boloria selene</i>
Snipe	<i>Gallinago gallinago</i>
Soft rush	<i>Juncus effusus</i>
Song Thrush	<i>Turdus philomelos</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Sphagnum Moss	<i>Sphagnum</i>
Spotted Flycatcher	<i>Muscicapa striata</i>
Starling	<i>Sturnus vulgaris</i>
Sweet Vernal	<i>Anthoxanthum odoratum</i>
Sycamore	<i>Acer pseudoplatanus</i>
Viviparous Lizard	<i>Zootoca vivipara</i>
Wall Cotoneaster	<i>Cotoneaster horizontalis</i>
Water Vole	<i>Arvicola amphibius</i>
Wavy Hair Grass	<i>Deschampsia flexuosa</i>
Whiskered Bat	<i>Myotis mystacinus</i>
White Clover	<i>Trifolium repens</i>
Willow	<i>Salix sp.</i>
Willow Tit	<i>Poecile montana</i>
Wood Warbler	<i>Phylloscopus sibilatrix</i>
Yarrow	<i>Achillea millefolium</i>
Yellowhammer	<i>Emberiza citrinella</i>
Yew	<i>Taxus baccata</i>
Yorkshire fog	<i>Holcus lanatus</i>

Annex E

Target Notes

Table C.1 Target Notes

Reference (Figure 4.5 & 4.6)	Description
1	Refuse tip
2	Previously unsurveyed area of site containing marshy grassland
3	Incidental common lizard record
4	Habitat that was previously categorised as blanket bog, changed to semi-improved acid grassland
5	Habitat that was previously categorised as dry heath/acid grassland, changed to continuous bracken and semi-improved acid grassland
6	Habitat that was previously categorised as dry heath/acid grassland, changed to wet heath/acid grassland
7	Habitat that was previously categorised as blanket bog, changed to wet heath/acid grassland

