

Document Reference	Appendix No.	Title
4.01.11a	11.1	Ecology Survey Results



Sirius Group

Oaklands Solar Farm and Battery Energy Storage System

Ecology Survey Results 2020-22- Non-technical summary

September 2022

FPCR Environment and Design Ltd

Registered Office: Lockington Hall, Lockington, Derby DE74 2RH

Company No. 07128076. [T] 01509 672772 [F] 01509 674565 [E] mail@fpcr.co.uk [W] www.fpcr.co.uk

This report is the property of FPCR Environment and Design Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without the written consent of FPCR Environment and Design Ltd. Ordnance Survey material is used with permission of The Controller of HMSO, Crown copyright 100018896.

Rev	Issue Status	Prepared / Date	Reviewed / Date	Approved / Date
-	Draft	DJC / 23.08.22	APD / 01.09.22	MEL / 01.09.22

CONTENTS

1.0	INTRODUCTION	3
2.0	AIMS AND OBJECTIVES	3
3.0	LEGISLATION	4
4.0	METHODOLOGY.....	5
5.0	RESULTS.....	14

TABLES

Table 1: Classification and survey requirements for bats in trees

Table 2: Bird survey dates and weather information

Table 3: Great crested newt habitat suitability index

Table 4: Statutory sites

Table 5: Non-statutory sites

Table 6: Species records

Table 7: Historical Great Crested Newt records

Table 8: Broadleaved Woodland descriptions

Table 9: Tree Line Descriptions (Target Noted)

Table 10: Hedgerows

Table 11: Ponds

Table 12: Tree Roost Assessment

Table 13: Amber and Red listed birds recorded on site

Table 14: Great Crested Newt Habitat Suitability Assessment

PHOTOGRAPHS

Image 1: Arable Fields F1 to F4

Image 2: Improved grassland, fields F5 to F8

Image 3: Improved Grassland Fields, F12 to F15

Image 4: Semi-Improved Neutral Grassland, F10 and F11

Image 5: Poor Semi Improved Neutral Grassland, F9.

Image 6: Poor Semi Improved / Rough Neutral Grassland TN4 and TN11

Image 7: Poor Semi Improved Neutral Grassland, F15 (TN20), F16 and F17

Image 8: Marshy Grassland, F8 and F9

Image 9: Newly Planted Orchard (TN13)

Image 10: Mature Trees Along Main Track between TN6 and TN7

Image 11: Semi-mature Ash, TN8

Image 12: Newly Planted Hedge (TN5)

Image 13: Patch of Scrub (TN15)

Image 14: Watercourses TN2 and TN3

Image 15: Sections of Watercourse at TN2 and TN3

Image 16: Ruined Building, B1

FIGURES

Figure 1: Site Location and Designated Statutory Sites Plan

Figure 2: Protected Species and Non-Statutory Sites Plan

Figure 3: Phase 1 Habitat Plan (Whole Site)

Figure 4: Phase 1 Habitat Plan (Pancross Farm)

Figure 5: Phase 1 Habitat Plan (Oaklands Farm)

Figure 6: Phase 1 Habitat Plan (Redlands Farm)

Figure 7: Waterbody Location Plan

Figure 8: Scoping Bird Survey Plan (Oaklands and Pancross) 2020

Figure 9: Scoping Bird Survey Plan (Whole Site) 2021

Figure 10: Scoping Bird Survey Plan (Oaklands and Pancross) 2022

APPENDICES

Appendix A: Nature Conservation Legislation

Appendix B: Non-WCA / EPS Species Records

Appendix C: Botanical Species List

1.0 INTRODUCTION

- 1.1 This report has been prepared by FPCR Environment and Design Ltd on behalf of Sirius Group. It details the results of desk study and field survey results for a solar farm and Battery Energy Storage System (BESS) development known as Oaklands Farm located in Vale of Glamorgan, South Wales (hereafter referred to as the “Site”).
- 1.2 This document forms the Technical Appendix for Chapter 11 of the Environmental Statement (ES) which details the Ecological Impact Assessment. The purpose of this document is to detail the methodology and results of the survey work assess within the ES.

Development Proposals

- 1.3 The proposed development site is formed of three areas located either side of the A4226 0.7km south of Bonvilston; Pancross Farm and Oaklands Farm to the west and Redlands Farm to the east. The total site area is 127 hectares.
- 1.4 The Oaklands Solar Farm and BESS will consist of ground mounted solar panels, providing a 50 MW output, and battery energy storage compound, with a capacity to charge, store and export up to 50MVA significantly contributing to Wales’ renewable energy. It will consist of solar arrays, sub-stations, fencing and subterranean cabling. Most of the areas with panels installed will remain or become grassland, with the arrays in rows. Sheep grazing will continue in certain fields with panelling installed. Hardstanding will be limited mainly to sub-stations and access tracks and there may be small areas of hedgerow temporarily lost for cabling.
- 1.5 All boundary features, including hedges, woodland, mature trees and watercourses will be largely unaffected, except for some potential for new punch-throughs. All-important boundary features are to be buffered with a stand-off and new planting, and ecological network will be maintained and enhanced overall. There will be no new lighting on site once the facility is operational.
- 1.6 The potential impacts of construction on all important ecological features (both habitats and species), the long-term loss of open habitats, and any losses, temporary or permanent, of small sections of hedge or woodland, are the primary impacts that have been considered.
- 1.7 The proposals constitute a Development of National Significance under the Planning (Wales) Act 2015. It will be applied to the Planning Inspectorate Wales.

Site Location and Context

- 1.8 The site’s central grid reference is ST 06807 72889 (see *Figure 1*). The surrounding land use is arable fields and the use of sheep farming. Bonvilston village lies to the north of site.
- 1.9 There will be opportunities for ecological enhancements such as (but not exhaustive) new hedgerow and woodland planting, and species-rich grassland planting.

2.0 AIMS AND OBJECTIVES

Phase 1 Habitat and Preliminary Protected Species Survey

- 2.1 The aim was to conduct an extended Phase 1 Habitat and Preliminary Protected Species Survey of the application site using both a desk study and a walk over survey, to present the results.

2.2 The objectives were to:

- Map the broad habitat types within the survey area;
- Determine the presence or potential presence of legally protected, rare or otherwise notable species;
- Assess the potential nature conservation importance of the recorded habitats;
- Identify designated sites of nature conservation value; and
- Identify the potential legal ecological constraints on development.

Further Protected Species Surveys

2.3 The aim of further protected species work was to establish the presence or absence of ecologically important features likely to be impacted by the proposals following the information gathered during the desk study and Phase 1 Habitat and Preliminary Protected Species Survey.

2.4 The objectives were to:

- Survey the site / suitable habitats using recommended survey guidelines where appropriate for each of the protected species / habitats identified for further survey during the Phase 1 Habitat and Preliminary Protected Species Survey.
- Use the results and desk study data to determine the likely presence or otherwise of protected species, and if possible / appropriate estimate population size.
- Determine the likelihood of the proposed application affecting protected, rare or notable habitats / species.

3.0 LEGISLATION

3.1 Detail on the relevant national policy and legislation for ecology in relation to development sites are provided Appendix A. The local policy, national policy and legislation most relevant here are:

- The Conservation of Habitats and Species Regulations (“The Habitats Regulations”) (Amendment)(EU Exit) 2019 in relation to the European Protected Species (EPS) great crested newt, (GCN), bats (all species), otter and dormouse; and European protected sites i.e. Special Areas of Conservation (SAC), Special Protection Areas (SPAs) and Internationally protected “Ramsar Sites” (collectively known as “Natura 2000 sites”).
- The Wildlife and Countryside Act 1981 (WCA) (as amended) in relation to all wild birds (including Schedule 1 species), other animals (notably Schedule 5 species), flora (those listed in Schedules 8 and 9) and Sites of Special Scientific Interest (SSSI);
- Protection of Badgers Act 1992;
- Hedgerow Regulations 1997 made under Section 97 of the Environment Act 1995;
- Environment (Wales) Act 2016 (EWA) – Section 7 Species and Habitats
- Planning Policy Wales (PPW) (2018);
- Policies MD9 & MG19-21: Vale of Glamorgan Local Development Plan 2011- 2026.

- Vale of Glamorgan Local Development Plan SPD (2018) Biodiversity and Development 2011-2026
- Conservation Status e.g. Birds of Conservation Concern (BoCC), International Union for Conservation of Nature (IUCN), national red data book, local level rarities, notables etc, population size, distributions and other sources of trends or relevant grey or peer reviewed literature.

4.0 METHODOLOGY

Desk Study

- 4.1 In order to compile existing baseline information, relevant ecological information was requested from both statutory and non-statutory nature conservation organisations including:
- Multi Agency Geographic Information for the Countryside (MAGIC); and
 - South East Wales Biodiversity Records Centre (SEWBRC).
- 4.2 Further inspection of colour 1:25,000 OS base maps (www.ordnancesurvey.co.uk) and aerial photographs from Google Earth (www.maps.google.co.uk) was also undertaken in order to provide additional context and identify any features of potential importance for nature conservation in the wider countryside.
- 4.3 The search area for biodiversity information was related to the significance of sites and species and potential zones of influence, as follows:
- European Protected Sites - 10km search around the site for sites of International Importance (e.g. SACs, SPAs and Ramsar sites).
 - Nationally Protected Sites - 5km search around the site for sites of National Importance (e.g. SSSIs). Sites of importance outside of the 2km range may also be highlighted if a potential impact is perceived.
 - Local Protected Sites - 2km search around the site for locally protected sites (e.g. LNRs).
 - Non-statutory Designated Sites - 2km search around the site.
 - Legally Protected and Notable Species - 2km search around the Survey Area.
- 4.4 When handling data species data:
- a) All results were filtered to include records from the previous ten years only (since 2010).
 - b) Results are plotted to identify any records falling within the site boundary.
 - c) The remainder of results are filtered, separating (from those listed in d.) all WCA Schedule 5 species, all likely breeding or over wintering WCA Schedule 1 birds, any EPS species and any Nationally Rare and scarce plants.
 - d) All remaining species including, but not limited to non-WCA / EPS, Environment (Wales) Act 2016 (Schedule 7), BoCC Red and Amber listed species are listed in *Appendix B*.

Field Survey

Habitats/flora

Phase 1

- 4.5 A field survey was conducted on 9th March 2020 of the habitats to the west of the A4226, and on Redlands Farm to the east of the A4226 on 8th December 2020. Additional habitat data was collected on 12th May 2021 at Oaklands Farm during the optimal season.
- 4.6 The survey was conducted using the methodology outlined in the Handbook for Phase 1 Habitat Survey (JNCC 2010)¹. This involved a systematic walkover of the site to classify the habitat types present (using the standardised Phase 1 Habitat classification system) and mapping these onto an OS base map. Each habitat was described based on the botanical merits and target notes used to record features of habitats of particular interest, as well as any sightings, evidence of, or potential for protected or notable species. A full botanical species list (*Appendix C*) was compiled during the survey, and a Phase 1 plan of all major habitat types produced (*Figure 3*). Where necessary, the abundance of species was quantified using the DAFOR scale, ranging from Dominant (>75%) to Abundant (75-51%), through Frequent (50-26%) and Occasional (25-11%) to Rare (10-1%).

Phase 2

- 4.7 Due to the presence two fields managed sensitively as hay meadows by the owners to increase biodiversity (F10 & F11), and the presence of marshy grassland (F5, F6, F7, F8 and F9) additional habitat surveys were conducted on 12th May 2021 to identify if the habitat were of sufficient botanical interest to be considered a priority habitat. The survey was a bespoke survey based on the UK Habitats Classification² and the Farm Environment Plan (FEP) Guidance Handbook³. 10x random 1m quadrats were conducted in each field and the percentage cover of all plants species was recorded.

Hedgerows

- 4.8 Hedgerows were surveyed using the Hedgerow Evaluation and Grading System (HEGS)⁴. This method of assessment includes noting down canopy species composition, associated ground flora and climbers, structure of the hedgerow including height, width and gaps, associated features including number and species of mature trees, banks, ditches and grass verges.
- 4.9 Each hedgerow is given a grade using HEGS with the suffixes '+' and '-', representing the upper and lower limits of each grade respectively. These grades represent a continuum on a scale from 1+ (the highest score and denoting hedges of the greatest nature conservation priority) to 4- (representing the lowest score and hedges of the least nature conservation priority) as follows:
- Grade 1 – High to very high value
 - Grade 2 – Moderately high to high value
 - Grade 3 – Moderate value

¹ JNCC, (2010). Handbook for Phase 1 habitat survey – a technique for environmental audit, ISBN 0861396367.

² Butcher B., Carey P., Edmonds R., Norton L. and Trewick J. (2020) The UK Habitat Classification User Manual Version 1.1

³ DEFRA (2005) Higher Level Stewardship: Farm Environment Plan Guidance Handbook

⁴ Clements, D.K. & Tofts, R.J. (1992). Hedgerow Evaluation and Grading System (HEGS): A methodology for the ecological survey, evaluation and grading of hedgerows.

- Grade 4 – Low value
- 4.10 Hedgerows graded 1 or 2 are considered to be a priority for nature conservation.
- 4.11 The hedgerows were also assessed against the Wildlife and Landscape criteria contained within Statutory Instrument No: 1160 – The Hedgerow Regulations 1997⁵ to determine whether they qualified as ‘Important’ hedgerows under the Regulations.

Invasive Plants, Notifiable Weed Species and Other Notable Flora

- 4.12 Consideration was given as to the presence of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA 1981)⁶ and the presence of any notable weeds including those covered under the Weed Act 1959⁷ (where population is significant enough to be considered injurious).
- 4.13 In addition, any rare or notable flora including those listed in the following policies as priorities were duly noted:
- Post 2010 UK Biodiversity Framework⁸ priority species;
 - Environment (Wales) Act 2016 – Section 7 Species and Habitats;
 - Vale of Glamorgan Biodiversity Action Plan (BAP) priority species;
 - International Union for the Conservation of Nature (IUCN) Red listed⁹ species;
 - Red Data Book (RDB)¹⁰ species; and
 - national, regional, county or vice-county rarities.

Fauna

Badger

- 4.1 A survey of the site for the presence of badgers was conducted during the walkover on 9th March 2020 and 8th December 2020.
- 4.2 As part of the survey all hedgerows, woodlands, scrub and other suitable habitats within the site and immediately adjacent to the site boundary, were searched for evidence of badger activity. The standard methodology was used, as outlined by Harris, Creswell and Jefferies (1991)¹¹. This involved a thorough search for evidence indicating the presence of badgers, including:
- setts, including earth mounds, evidence of bedding and runs between setts;
 - latrines, often located close to setts, at territory boundaries or adjacent to favoured feeding areas;
 - prints and paths or track ways;
 - hairs caught on rough wood or fencing; and

5 DEFRA, (1997). The Hedgerow Regulations 1997: A Guide to the Law and Good Practice. London, HMSO.

6 Act of Parliament, (1981). The Wildlife and Countryside Act 1981 (as amended), London: HMSO.

7 Act of Parliament. (1959). The Weed Act 1959. London: HMSO.

8 JNCC and Defra (on behalf of the Four Countries' Biodiversity Group). (2012). UK Post-2010 Biodiversity Framework. July 2012.

9 International Union for Conservation of Nature (IUCN), (2012). Red List 2012.

10 Cheffings, C.M. & Farrell, L. (Eds), Dines, T.D., Jones, R.A., Leach, S.J., McKean, D.R., Pearman, D.A., Preston, C.D., Rumsey, F.J., Taylor, I. (2005). The Vascular Plant Red Data List for Great Britain. Species Status 7: 1-116. Joint Nature Conservation Committee, Peterborough.

11 Harris, S., Creswell, P. and Jefferies, D., (1991). (Report) Surveying Badgers. The Mammal. Society, Bristol.

- other evidence including snuffle holes, feeding and playing areas and scratching posts.
- 4.3 The identification of snuffle holes, scratching posts or feeding signs on their own is not necessarily conclusive evidence of the presence of badgers. A number of such signs may need to be seen in conjunction before they can be said to be conclusive of badger activity.
- 4.4 Where setts are found, their status and level of activity is noted. Sett status is broadly categorised as follows:
- *Main sett* – usually continuously used with many signs of activity around, a large number of holes and conspicuous spoil mounds.
 - *Annexe sett* – usually located close to a main sett and connected to it by well used paths. Annexes may not be continuously occupied.
 - *Subsidiary sett* – lesser used setts comprising a few holes and without associated well-used paths. Subsidiary setts are not continuously occupied.
 - *Outlier sett* – one or two holes without obvious paths. These are used sporadically.
- 4.5 Level of activity is described as:
- *Well used* – clear of debris, trampled soil mounds and obviously active, with signs of activity such as presence of prints, dislodged guard hairs around the entrances.
 - *Partially used* – some associated debris or plants at the entrance. Could be used with minimal excavation and usually with signs of activity within the vicinity, for example, badger pathways.
 - *Disused* – partially or completely blocked entrances.

Bats

Assessment of Trees

- 4.6 Tree assessments were undertaken from ground level, with the aid of a torch and binoculars (where appropriate). These surveys were undertaken on 9th March 2020 by a suitably experienced bat ecologist from FPCR. The target trees were those located outside field boundaries on Redlands farm. The suitability of trees for the remainder of the site was scoped during the Phase 1 habitat survey and these results are also provided.
- 4.7 During the survey, Potential Roosting Features (PRF) for bats such as the following were sought (Based on P16, British Standard 8596:2015)¹²:
- natural holes (e.g. knot holes) arising from naturally shed branches or cavities created by branches tearing out from parent stems;
 - man-made holes (e.g. cavities that have developed from flush cuts or branches previously pruned back to a branch collar;
 - woodpecker holes;
 - cracks/splits in stems or branches (horizontal and vertical);
 - partially detached, loose or bark plates;

¹² BSI (2015). Surveying for Bats in Trees and Woodland – Guide. British Standards Institution. BS8596:2015, UK.

- cankers (caused by localised bark death) in which cavities have developed;
 - other hollows or cavities, including butt rots;
 - compression of forks with occluded bark, forming potential cavities;
 - crossing stems or branches with suitable roosting space between;
 - ivy stems with diameters in excess of 50mm with suitable roosting space behind (or where roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk);
 - bat or bird boxes; and
 - other suitable places of rest or shelter.
- 4.8 Certain factors such as orientation of the feature, its height from the ground, the direct surroundings and its location in respect to other features may enhance or reduce the potential value.
- 4.9 Trees were classified into general bat roost potential groups based upon the presence of these features. *Table 1* (below) broadly classifies the potential categories as accurately as possible as well as discussing the relevance of the features. This table is based upon Table 4.1 and Chapter 6 in *Bat Surveys for Professional Ecologists: Good Practice Guidelines*.
- 4.10 Although the British Standard 8596:2015 document groups trees with moderate and high potential, these have been separated below (as per Table 4.1 in *The Bat Conservation Trust Guidelines*) to allow more specific survey criteria to be applied.

Table 1: Classification and survey requirements for bats in trees

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey work / Actions
Confirmed Roost	Evidence of roosting bats in the form of live/dead bats, droppings, urine staining, mammalian fur oil staining, etc.	<p>A Natural England derogation licence application will be required if the tree or roost site is affected by the development or proposed arboricultural works. This will require a combination of aerial assessment by roped access bat workers (where possible, health and safety constraints allowing) and nocturnal survey during appropriate periods (e.g. nocturnal survey - May to August) to inform on the licence.</p> <p>Works to tree undertaken under supervision in accordance with the approved good practice method statement provided within the licence.</p> <p>However, where confirmed roost site(s) are not affected by works, work under a precautionary good practice method statement may be possible.</p>

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey work / Actions
High Potential	<p>A tree with one or more Potential Roosting Features that are obviously suitable for larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter protection, conditions (height above ground level, light levels, etc) and surrounding habitat.</p> <p>Examples include (but are not limited to); woodpecker holes, larger cavities, hollow trunks, hazard beams, etc.</p>	<p>Aerial assessment by roped access bat workers (if appropriate) and / or nocturnal survey during appropriate period (May to August).</p> <p>Following additional assessments, a tree may be upgraded or downgraded based on findings.</p> <p>If roost sites are confirmed and the tree or roost is to be affected by proposals a licence from Natural England will be required.</p> <p>After completion of survey work (and the presence of a bat roost is discounted), a precautionary working method statement may still be appropriate.</p>
Moderate Potential	<p>A tree with Potential Roosting Features which could support one or more potential roost sites due to their size, shelter protection, conditions (height above ground level, light levels, etc) and surrounding habitat but unlikely to support a roost of high conservation status (i.e. larger roost, irrespective of wider conservation status).</p> <p>Examples include (but are not limited to); woodpecker holes, rot cavities, branch socket cavities, etc.</p>	<p>A combination of aerial assessment by roped access bat workers and / or nocturnal survey during appropriate period (May to August).</p> <p>Following additional assessments, a tree may be upgraded or downgraded based on findings.</p> <p>After completion of survey work (and the presence of a bat roost is discounted), a precautionary working method statement may still be appropriate.</p> <p>If a roost site/s is confirmed a licence from Natural England will be required.</p>
Low Potential	<p>A tree of sufficient size and age to contain Potential Roosting Features but with none seen from ground or features seen only very limited potential.</p> <p>Examples include (but are not limited to); loose/lifted bark, shallow splits exposed to elements or upward facing holes.</p>	<p>No further survey required but a precautionary working method statement may be appropriate.</p>
Negligible/No potential	<p>Negligible/no habitat features likely to be used by roosting bats</p>	<p>None.</p>

* The Conservation of Habitats & Species Regulations 2010 (as amended) affords protection to "breeding sites" and "resting places" of bats. The EU Commission's Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC, February 2007 states that these are places "where there is a reasonably high probability that the species concerned will return".

Bat Foraging and Commuting

- 4.11 Desk study and habitat assessment during the Phase 1 habitat surveys was used to determine the suitability of the Site for commuting and foraging bats. Habitat suitability was then determined using Table 4.1 and Table 3.4 of The Bat Conservation Trust Guidelines and professional judgment. Table 4.1 assess the broad habitat types to determine if the site has Low, Medium or High Suitability. Table 3.4 provides habitat details for individual species.
- 4.12 The bat species recorded within 2km of the Site and distribution information taken from South East Wales Biodiversity Records Centre was then used to predict the species likely to be utilising the habitat on site to provide a basis for determining the site's overall importance.

Birds

Bird Survey

- 4.13 An initial bird scoping survey was conducted during the Phase 1 Habitat Surveys by a suitably experienced ornithologist to ascertain the sites' potential to support breeding or overwintering bird species. A judgement of the suitability of the Site to support WCA Schedule 1, Environment (Wales) Act 2016 (Schedule 7) species and/or BoCC Red or Amber list species was then made.
- 4.14 This was followed up by a series of three breeding bird surveys (BBS) on 6th May 2020 (western farms only), 12th May 2021 and 24th May 2022 that recorded all species present, but specifically targeted gaining detailed information on the number and breeding status of skylark *Alauda arvensis* present.
- 4.15 The survey methodology employed was broadly based on that of territory mapping (Bibby et al., 2000)¹³ as developed by the British Trust for Ornithology (BTO). Standard BTO species codes and symbols for bird activities were used to identify birds and denote activity, sex and age where appropriate.
- 4.16 The site was walked over by an ecologist experienced in bird surveying, between 05:00 and 11:00. A route was mapped out prior to the surveys being undertaken, and surveys paid particular attention to linear features, such as hedgerows and tree lines, and natural features such as areas of scrub and waterbodies. Bird surveys were not undertaken in unfavourable conditions such as heavy rain or strong wind, which may negatively affect the results. Table 2 details the dates and weather conditions observed during surveys.
- 4.17 In 2022, a thermal camera was also used to search for skylark and aid in breeding assessment. The dates and weather conditions are provided in Table 2 below.

Table 2: Bird survey dates and weather information

Date	Cloud Cover (%)	Rain	Wind	Visibility
06.05.20	0	0	2-3	Good
12.05.21	40	0	1	Good

¹³ Bibby, C.J., Burgess, N.D., Hill, D.A. and Mustoe, S.H. (2000). Bird Census Techniques, 2nd Edition. Academic Press, London.

Date	Cloud Cover (%)	Rain	Wind	Visibility
24.05.22	30-60	0	2-3	Good

4.18 The criteria used in the assessment of breeding birds has been adapted from the standard criteria proposed by the European Ornithological Atlas Committee (EOAC 1979)¹⁴ and are grouped into three categories:

- *Possible breeder* e.g. birds observed in suitable habitat or singing male recorded;
- *Probable breeder* e.g. pair in suitable habitat, territory defended, agitated behaviour or nest building;
- *Confirmed breeder* e.g. recently fledged young observed, adult birds carrying food for young; and
- Birds that were considered to be not using the site for breeding were categorised as *non-breeders* e.g. flying over the site, migrant, habitat not suitable.

Great Crested Newt (GCN)

4.19 A combination of desk study and habitat assessment was used to determine the likelihood of the site supporting GCN. Offsite ponds within were also mapped (*Figure 7*).

4.20 A total of six waterbodies were identified onsite. Habitat Suitability Index (HSI) assessments were conducted on each waterbody during the phase 1 habitat surveys.

4.21 The HSI instrument (Oldman *et al.* 2000)¹⁵ assesses waterbodies against ten pre-determined criteria, producing a score which indicates the degree of suitability for occupation by great crested newts. In general, waterbodies with a higher HSI score are more likely to support great crested newts than those with a lower score and there is a positive correlation between HSI scores and waterbodies with newts recorded. The ten separate attributes assessed for each waterbodies are as follows:

- geographic location;
- waterbody area;
- frequency of drying;
- water quality;
- shade;
- presence of waterfowl;
- presence of fish;
- number of linked waterbodies;
- terrestrial habitat; and
- macrophytic coverage.

¹⁴ EOAC (1979). Categories of Breeding Bird Evidence. European Ornithological Atlas Committee.

¹⁵ Oldham, R.S., Keeble, J., Swan, M. J. S. and Jeffcote, M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal, 10 (4), 143-155.

- 4.22 A score is assigned according to the most appropriate criteria level set within each attribute and a total score calculated of between 0 and 1. Suitability is then determined according to the following scale shown in *Table 3*. It should be noted that a low HSI does not necessarily rule out the possibility great crested newts are present, although it does aid in informing the decision as to whether a given waterbody should be selected for further survey, or the likely presence of populations within the wider area.

Table 3: Great crested newt habitat suitability index

HSI	Waterbody Suitability
<0.5	Poor
0.5 - 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
>0.8	Excellent

Environmental DNA Survey

- 4.23 Based on the HIS results, there was intention to conduct Environmental DNA (eDNA) sampling on ponds P4 and P6 in 2020, 2021 and 2022 to determine the presence / probable absence of GCN in accordance with the guidance set out in Biggs et al. 2014¹⁶ as approved by Natural England for the determination of GCN presence/probable absence; however, during each year the ponds were dry by May.

Reptiles

- 4.24 Desk study and habitat assessment during the Phase 1 habitat surveys was used to determine the areas of the Site potentially suitable for reptiles. Habitat suitability was determined using Froglife Survey Guidance¹⁷ and professional judgement.

Hazel Dormouse

- 4.25 Desk study and habitat assessment during the Phase 1 habitat surveys was used to determine the suitability of the Site for dormice. Habitat suitability was then determined using the Dormouse Conservation Handbook¹⁸ and professional judgement.
- 4.1 The habitat within the wider environment, distribution information taken from the desk study results and an online search for local information was conducted. This was then used to predict the likelihood of dormice being present onsite within the wooded boundary features.

¹⁶ Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Griffiths, R.A., Foster, J., Wilkinson, J., Arnett, A., Williams, P. and Dunn, F. 2014. *Analytical and methodological development for improved surveillance of the Great Crested Newt. Defra Project WC1067*. Freshwater Habitats Trust: Oxford.

¹⁷ Draper, A. 2015 *Froglife: Surveying for Reptiles*. Froglife

¹⁸ Bright, P., Morris, P., and Mitchell-Jones, T. 2006 *The Dormouse Conservation Handbook – second edition*. English Nature

Otter

- 4.2 Desk study and habitat assessment during the Phase 1 habitat surveys was used to determine the suitability of the Site for otter. Habitat suitability was then determined using the appropriate guidance for otter survey¹⁹ and professional judgement.
- 4.3 The habitat within the wider environment, distribution information taken from Kean and Chadwick 2021²⁰. This was then used to predict the likelihood of otter being present onsite.

Limitations And Assumptions

Desk Study

- 4.4 The species data collated for the desk study is derived from records submitted by members of the public and from specialist volunteer group surveys. It does not represent a definitive list of species that occur in the local area, and the absence of records does not necessarily imply absence of such species.

5.0 RESULTS

Desk Study

Statutory Designated Sites

- 5.1 A total of six statutory designated sites were identified within 10km of the site boundary (*Table 4*). The closest is Nant Whitton Woodlands SSSI 200m away.

Table 4: Statutory sites

Site Name	Site Reference	Proximity to site (approximate)	Description
Nant Whitton Woodlands Site of Special Scientific Interest (SSSI)	ST062715.	200m south west of Oaklands Farm area	22.2 hectares of narrow strip of sloped woodland. Primarily ash and oak, with hazel, maple, spindle, wayfaring tree and other native shrubs.
Ely Valley SSSI	ST061789 – ST097767.	2.5 km north of Redlands Farm Area	87 hectares alongside the River Ely. Contains large number of the rare plant, wolfsbane <i>Aconitum anglicum</i> .
Pysgodlyn Mawr SSSI	ST168669.	4.5km north west of the Pancross Farm area	Small wetland, 4.1 hectares, that supports a sequence of habitats, ranging from open water and reed swamp to acid bog and heath.
Fferm Walters SSSI	ST099688.	4.7km south east of Oaklands Farm area	An exceptionally large area, 24.87 hectares, of species-rich neutral grassland. The grassland is associated with woodland, hedgerows, scrub and smaller areas of damp grassland.

¹⁹ Chanin P (2003) Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No 10. English Nature, Peterborough.

²⁰ Kean, E.F. and Chadwick, E.A. 2021 *Otter Survey of Wales 2015-2018. NRW Report No. 519*. Natural Resources Wales

Site Name	Site Reference	Proximity to site (approximate)	Description
Coedydd Y Barri/ Barry Woodlands SSSI	ST087690 and ST127707.	4.8km south east of Oaklands Farm area	120 hectares of semi-natural broadleaved woodland. Comprises of fourteen separate woodland blocks.
Severn Estuary RAMSAR	ST480830.	9.8km to south east of Redlands Farm area	The larger area of the Severn Estuary with second largest tidal range in the world. Unique estuary habitat that covers the mouths of four major rivers (the Severn, Wye, Usk and Avon) and lesser rivers. The intertidal zone is one of the largest and most important in Britain. Supports large populations of migratory fish (e.g. salmon <i>Salmo solar</i>), wintering and wading birds (e.g. ringed plover <i>Charadrius hiaticula</i>).

Non-Statutory Designated Sites

- 5.2 A total of 26 non-statutory designated sites were identified within 2km of the site boundary (*Table 5*). Notably, the site sits on North of Coed Quinnet SINC, Coed Quinnet SINC, and Brook Wood SINC.

Table 5: Non-statutory sites

Site Name	Site Reference	Proximity to site (approximate)	Description
Land along Nant Llancarfan Site of Importance for Nature Conservation (SINC)	SINC No. 216, 33-G3	20m south west of Oaklands Farm	A complex of fen and other mire communities split across three fields with mature hedgerows separating the three units. Priority habitats include scrub, wet grassland, purple moor-grass and rush pastures, and lowland fens.
West of Coed Quinnet SINC	SINC No. 219, 33-W4	180m south west of Oaklands Farm.	Large field of damp semi-improved grassland with clumps of bramble and young ash. Occasional semi-mature ash and English oak. Priority habitats include grassland, hedge, and wood pasture. Brown hare have been observed on site and the habitat appears to offer excellent bat foraging potential.
North of Coed Quinnet SINC	SINC No. 218, 33-G1	0m north of Oaklands Farm	As above

Site Name	Site Reference	Proximity to site (approximate)	Description
Coed Quinnet SINC	SINC No. 218, 33-G1	0m south of Oaklands Farm	As above
Land south of Blackland Farm SINC	SINC No. 220, 33-W5	210m south east of Oaklands Farm.	A fen meadow with semi-natural broadleaved woodland. The site lies immediately adjacent to a large block of SSSI woodland. Priority habitats include wet grassland, broadleaved woodland, and purple moor-grass fen meadow. Woodland offers good dormouse habitat.
Land north of Whitton Rosser Farm SINC	SINC No. 222, 33-W6	380m south east	Small woodland with good botanical and structural diversity. Priority habitats include scrub and native woodland offering excellent dormouse habitat.
Land north of Little Hamston Farm SINC	SINC No. 226, 34-W4	800m south of Redlands Farm	Three small degraded broadleaved woodlands linked by a wooded stream. Dominant species include ash, field maple, and hazel. There is good potential for habitats to support both bats and dormouse.
Land north of Coed y Cwm	SINC No. 279, 41-G9	1.4km south of Oaklands Farm	Two large sections of valley woodland, fully fenced and ungrazed. A stream runs through the eastern section. Priority habitats include broadleaved native woodland and lowland meadow offering excellent dormouse habitat.
Coed y Graig SINC	SINC No. 225, 34-W3	780m south east of Redlands Farm	Medium-sized mixed woodland consisting of sitka spruce, ash, and wych elm. Open structure and fairly damp, thicker bramble to the south.
Coed Sion Hywel SINC	SINC No. 224, 34-W2	192m south east of Redlands Farm.	Large woodland, part native deciduous, part mixed plantation, and part beech plantation. High value dormouse habitat in places.
Brook Wood SINC	SINC No. 223, 34-W1	0m south of Redlands Farm	Woodland with a stream along the northern boundary. Low value dormouse habitat but bat roost potential in larger trees.

Site Name	Site Reference	Proximity to site (approximate)	Description
Betty Lucas Wood SINC	SINC No. 174, 25-W3	0m south of Redlands Farm	Mid-size broadleaved woodland bordered on the north and south by ditches. Several shallow pits to the centre and west. Less coppice structure and damper to the east. Priority habitats include native mature woodland, poor dormouse habitat but good roosting potential for bats.
Coed y cwm	SINC No. 175, 26-W1	0m south of Redlands Farm	Linear broadleaved woodland divided to the east by a track. Western two-thirds on a steep north slope and eastern third centred on a small stream.
Land south of Ty'n-y-Coed SINC	SINC No. 217, 33-W3	0m south of Redlands Farm	Small broadleaved woodland with areas of tall herbs and scrub. Broad and shallow wood bank and ditch present. Moderate dormouse habitat.
Redland Wood SINC	SINC No. 173, 25-W2	0m north of Pancross Farm	Medium size woodland with waterlogging in places and several small streams run through. Priority habitat of native broadleaved woodland.
Land along River Waycock	SINC No. 176, 26-W6	18m southeast of Redlands Farm	Small copse managed for pheasants. Oak and ash present with dense and diverse understorey. Stream on north side and good dormouse habitat.
Amelia Trust Woodland Pond SINC	SINC (no reference number available)	135m southeast of Oaklands Farm	Located on a donkey sanctuary, a small pond situated in broadleaved woodland.
Amelia Trust Dew Pond	SINC (no reference number available)	254m south of Oaklands Farm	Located in a donkey sanctuary, a small pond situated near farmhouses and agricultural land.
Coed y Lan	SINC No. 172, 25-W1	175m northwest of Pancross Farm	Mature broadleaved woodland with some open areas. Stream runs through the middle, good quality dormouse habitat.

Site Name	Site Reference	Proximity to site (approximate)	Description
Land south of Blackland Farm	SINC No. 220, 33-W5	210m southeast of Oaklands Farm	Triangular fen-meadow with semi-natural broadleaved woodland fringe on northern and eastern edges. Priority habitat includes wet grassland, native woodland, and fen meadow. Possibility to support interesting and diverse invertebrate populations, and good dormouse habitat.
Land northwest of Whitton Rosser Farm	SINC No. 222, 33-W6	380m southeast of Oaklands Farm	Small woodland on abandoned ground which has developed into secondary woodland. Good botanical and structural diversity. Several large English oaks on site. Excellent dormouse habitat.
Land north of Llanvithyn Farm	SINC No. 214, 33-W1	1090m southwest of Pancross Farm	Small section of a larger woodland block, relatively species-rich and fenced. A stream runs through the wood and flat areas are very waterlogged. Moderate dormouse habitat.
Coed Arthur	SINC No. 212, D32 W1	1140m west of Pancross Farm	Extensive area of forestry comprising mainly broadleaved woodland and conifer plantation. Patchy ground flora but Bluebell present throughout, other notable species include thin-spiked wood-sedge, wood anemone, and wood millet.
Northwest of Garnllwyd Farm	SINC No. 215, 33-W2	1190m southwest of Oaklands Farm	Small broadleaved woodland with steep south easterly aspect. Moderate dormouse habitat.
Log Wood	SINC No. 170, 25-7-W2	1430m north of Pancross Farm	Block of semi-natural woodland along the line of a small stream. Raised ground supports beech and ash and below are hazel stools and tangles of bramble. Dead wood left to decay in situ.

Site Name	Site Reference	Proximity to site (approximate)	Description
Gaer Wood	SINC No. 169, 25-5-W1	1522m north of Pancross Farm	Hilltop woodland overlying an archaeological monument. Generally mixed broadleaved woodland with mature trees. Ash dominates the older parts with silver birch. Understorey is variable but older area have abundant hazel stools with holly and wych elm. Two ponds to the north, completely overhung by vegetation.

Protected Rare and Otherwise Notable Species

5.3 All WCA, EPS and Nationally Rare species as defined above are presented below in *Table 5*.

Table 6: Species records

Species	Conservation Status	Total Number of Records within 1km	Location / Minimum distance of records from site boundary
Mammals - bats			
Myotis sp	EPS, WCA Sch 5, NERC 41	1	1204m north west of Pancross
Serotine <i>Eptesicus serotinus</i>	EPS, WCA Sch 5, NERC 41	2	1204m north west of Pancross
Pipistrelle sp	EPS, WCA Sch 5, NERC 41	3	1204m north west of Pancross
Common pipistrelle <i>Pipistrellus pipistrellus</i>	EPS, WCA Sch 5, NERC 41	3	1205m north west of Pancross
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	EPS, WCA Sch 5, NERC 41	4	1204m north west of Pancross
Noctule <i>Nyctalus noctula</i>	EPS, WCA Sch 5, NERC 41	1	1204m north west of Pancross
Long-eared bat species <i>Plecotus</i>	EPS, WCA Sch 5, NERC 41	1	1204m north west of Pancross
Brown long-eared bat <i>Plecotus auritus</i>	EPS, WCA Sch 5, NERC 41	1	1204m north west of Pancross
Lesser horseshoe bat <i>Rhinolophus hipposideros</i>	EPS, WCA Sch 5, NERC 41, Annex II	4	Closest record 1204m north west of Pancross

Species	Conservation Status	Total Number of Records within 1km	Location / Minimum distance of records from site boundary
Mammals - other			
Badger <i>Meles meles</i>	BPA	4	1327m (Confidential)
Polecat <i>Mustela putorius</i>	WCA	2	1636m north west of Pancross
Amphibians			
Great crested newt <i>Triturus cristatus</i>	WCA , EPS	4	980m north west of Pancross
Birds			
Barn owl <i>Tyto alba</i>	WCA Sch1	10	684m south of Oaklands
Goshawk <i>Accipiter gentilis</i>	WCA Sch1	1	684m south of Oaklands
Hobby <i>Falco subbuteo</i>	WCA Sch1	None	1640m north west of Pancross
Kingfisher <i>Alcedo atthis</i>	WCA Sch1	None	1640m north west of Pancross
Merlin <i>Falco columbarius</i>	WCA Sch1	None	1640m north west of Pancross
Peregrine <i>Falco peregrinus</i>	WCA Sch1	None	1204m north west of Pancross
Quail <i>Coturnix coturnix</i>	WCA Sch1	None	1640m north west of Pancross
Red Kite <i>Milvus milvus</i>	WCA Sch1	1	496m south of Redlands
Redwing <i>Turdus iliacus</i>	WCA Sch1	None	1385m south west of Oaklands

Status Key: EPS = European Protected Species. WCA = Wildlife and Countryside Act 1981 (as amended). Sch5 = Schedule 5 of WCA, Sch1 Schedule 1 of the Wildlife and Countryside Act, 1981.

- 5.4 The following Great Crested Newt records are older than 10 years old but have been included (Table 6).

Table 7: Historical Great Crested Newt records

Date	Distance from site boundary
01/04/2008	862m
07/04/2004	949m
Seven records between 1994 and 2004	980m

Date	Distance from site boundary
29/09/2009	1361m
14/04/2004	2048m
Two records from 2004	2384m

Field Survey

- 5.5 A Phase 1 plan of all major habitat types within the site boundary has been produced (*Figure 1*), which includes appropriate labels and target notes. A full botanical species list (*Appendix C*) was compiled during the survey. Details and photographs of each habitat type are presented in the following sections.

Arable

- 5.6 F1 - F4 Pancross. These are large fields that had been sown with a perennial ryegrass *Lolium perenne* silage crop.

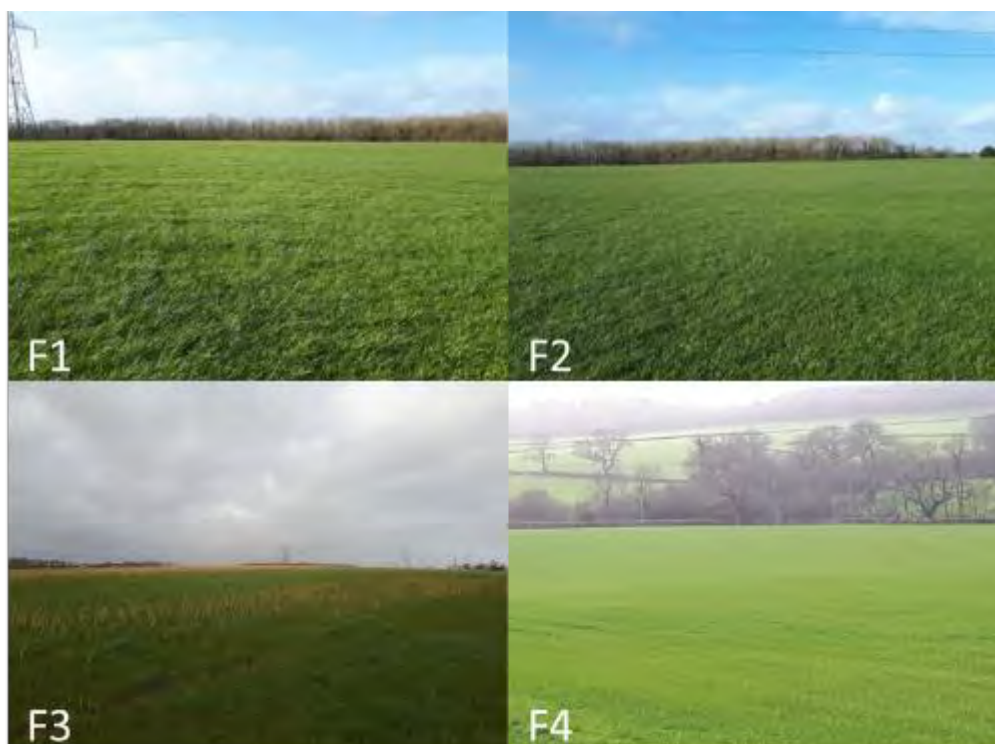


Image 1: Arable Fields F1 to F4

Improved Grassland

- 5.7 F5, F6, F7 and F8 at Pancross. Nutrient rich sheep-grazed fields presenting as intensively managed and of low botanical value. Diversity was low with fewer than 9 species per m² (6-7 species). Perennial ryegrass, Yorkshire fog *Holcus lanatus*, Sweet vernal grass *Anthoxanthum odoratum* and creeping bent *Agrostis stolonifera* were the most abundant grass species, with occasional to frequent red fescue *Festuca rubra*, occasional crested dog's tail *Cynosurus cristatus*,

rough meadow grass *Poa trivialis* and locally abundant meadow foxtail *Alopecurus pratensis*. Creeping buttercup *Ranunculus repens*, red clover *Trifolium pratense* and Taraxacum agg. were occasional to frequent throughout, and patches of hard rush *Juncus inflexus* were present in most the fields. White clover *Trifolium repens*, meadow buttercup *Ranunculus acris*, cuckoo flower *Cardamine pratensis*, common sorrel *Rumex acetosa*, creeping thistle *Cirsium arvense*, cock's foot *Dactylis glomerata* and crested dog's tail were occasional within some of the fields, and there were rare instances of common vetch *Vicia sativa*, common mouse ear *Cerastium fontanum*, black medic *Medicago lupulina*, broad-leaved plantain *Plantago major* and greater knapweed *Centaurea scabiosa*.



Image 2: Improved grassland, fields F5 to F8

- 5.8 F8 at Oaklands was the wettest of the four fields, with much of it dominated by rushes. This area has been categorised as marshy grassland and are described below.
- 5.9 F12 to F15 at Redlands. These fields had not been seeded for 25 years (information from landowner) but were subject to grazing from sheep, cattle and horses and were nutrient rich from muck spreading. Some were cut for hay in the spring with aftermath grazing. All fields were uniformly short and were dominated by grasses, primarily perennial ryegrass, Yorkshire fog and creeping bent, with occasional patches of red fescue. Creeping thistle, red clover, white clover, taraxacum agg, creeping buttercup, soft rush *Juncus effusus* and common mouse ear were all present. Creeping thistle was locally abundant.



Image 3: Improved Grassland Fields, F12 to F15

Semi-improved Neutral Grassland

- 5.10 F10 and F11 at Oaklands. These fields were the most diverse botanically on site. F10 had 13.1 species per m² and F11 13.6 species per m². The owners have managed these fields more sensitively as hay meadows for a number of years, and they present as the NVC category MG6 grasslands, a semi-natural grassland community. Sweet vernal grass and red fescue were the most abundant grass species in both fields. F10 also had an abundance of Yorkshire fog, creeping bent and rough meadow grass, while in F11 these were all frequent. Perennial ryegrass was frequent in both fields, and cock's foot, annual meadow grass, meadow foxtail, crested dog's tail were rare or occasional. In total, grasses formed 70% of the sward in F10 and 49% of the sward in F11.
- 5.11 Indicator species of Lowland Meadow grasslands in South Wales were present, three in F10 and four in F11. Red clover was the most abundant constituting 10% of the sward in both fields. Meadow vetchling *Lathyrus pratensis* was the next most abundant (2%) with presence in 7/10 quadrats in F10 and 9/10 quadrats in F11. The remaining indicators were birds foot trefoil *Lotus corniculatus* (F10), field woodrush *Luzula campestris* (F11), yellow rattle *Rhinanthus minor* (F11) and *Carex* sp. (F11), and all of which occurred in small amounts. There was not a sufficient quantity or variety of indicators to suggest the grassland is an example of species rich MG6 worthy of designation as a SNCI (Vale of Glamorgan Council, 2010²¹). However, they do suggest that the grassland may continue to improve in terms of biodiversity value with appropriate management.
- 5.12 Undesirable species were above the 5% threshold typically assigned to other neutral grasslands (DEFRA, 2005²²). Creeping buttercup constituted 6% of the sward in F10 and 9% in F11. Hogweed

²¹ Vale of Glamorgan Council (2010) Identification of SINC's and Priority Habitats

²² DEFRA (2005) Higher Level Stewardship: Farm Environment Plan Guidance Handbook

Heracleum mantegazzianum and creeping thistle within F10 (4%) are also undesirable species for lowland meadows.

- 5.13 Taraxacum agg. and ribwort plantain formed the majority of the remaining forbes component in F11 (15%), and other species recorded across both fields included hairy tare *Vicia hirsuta*, common vetch *Vicia sativa*, hairy sedge *Carex hirta*, common sorrel *Rumex acetosa*, black medick, meadow buttercup and common vetch.



Image 4: Semi-Improved Neutral Grassland, F10 and F11

Poor Semi Improved Neutral Grassland

- 5.14 Outside of the marshy grassland areas (see below), F9 at Oaklands was a transitional community that has been categorised as poor semi-improved grassland. The sward was co-dominated by Sweet vernal grass, Yorkshire fog, and red fescue, with occasional creeping bent present also. There was occasional red clover, creeping buttercup, common mouse ear, meadow vetchling and creeping cinquefoil *Potentilla reptans*, as well as patches of hard *Juncus inflexus* and soft rush. Glaucous sedge *Carex flacca* was present as well as silverweed *Argentina anserina*, but these were more abundant nearer the marshy grassland areas.



Image 5: Poor Semi Improved Neutral Grassland, F9.

- 5.15 TN4 was a patch of rough semi-improved neutral grassland fenced within the slurry lagoon (P3). TN11 was a small area of rough grassland and scattered scrub located along the track. Dominant grass species were Cock's foot, Yorkshire fog and false oat grass *Arrhenatherum elatius*, with soft

and hard rush. Also present were broad-leaved dock *Rumex obtusifolius*, stinging nettle *Urtica dioica*, lords and ladies *Arum alpinum* and marsh thistle *Cirsium palustre*.



Image 6: Poor Semi Improved / Rough Neutral Grassland TN4 and TN11

- 5.16 Fields F15 (TN20), F16 and F17 at Redlands were heavily modified and grass dominant, but lacked perennial ryegrass and were a rougher sward.



Image 7: Poor Semi Improved Neutral Grassland, F15 (TN20), F16 and F17

Marshy Grassland

- 5.17 Areas of rush dominated habitat were present in both fields F8 and F9 at Oaklands . F8 was heavily poached and of low botanical diversity, and mostly composed of soft rush, jointed rush, hard rush

and wet bare ground. Marsh thistle, marsh bedstraw *Galium palustre*, cuckoo flower, greater birds-foot trefoil *Lotus pedunculatus*, glaucous sedge, tufted hair grass *Deschampsia cespitosa* and fox sedge *Carex vulpinoidea* were all present but were all rare to occasional.

- 5.18 F9 appeared less intensively grazed than F8 and was slightly more diverse. The areas of rushes were dominated by soft, hard and compact rush *Juncus conglomeratus*. Glaucous sedge was abundant along with occasional patches of tufted hair grass. Other characteristic marshy grassland species were present in small amounts including greater birds-foot trefoil, marsh thistle, cuckoo flower, meadow sweet and silverweed. Marsh bedstraw, marsh foxtail, greater willowherb *Epilobium hirsutum* and lesser spearwort *Ranunculus flammula* were also recorded.



Image 8: Marshy Grassland, F8 and F9

Broadleaved Woodland

- 5.19 Mature mainly sessile oak *Quercus petraea* broadleaved woodland and wooded watercourse corridors formed much of the site's boundaries. Small sessile oak and ash woodland were also present. There were fifteen in total (W1 – W15) and these are described below in Table 7.

Table 8: Broadleaved Woodland descriptions

Broadleaved Woodlands - W1 to W15	
	
<p>W1 is Redlands Wood SINC (see Table 5 above). The boundary with the site is formed by mature trees and shrub species and intensively managed</p>	<p>W2 was a deciduous copse with ephemeral ponds. Ash was the dominant canopy species with occasional sessile oak, and the understory was formed by elder <i>Sambucus nigra</i>, hawthorn <i>Crataegus monogyna</i> and bramble <i>Rubus fruticosus</i>. The ground flora was mostly ruderal/rank with nettle <i>Urtica dioica</i>, dock species <i>Rumex sp.</i> and cleaver <i>Galium aparine</i>. Hogweed and cow parsley <i>Anthriscus sylvestris</i>, with some lords and ladies and dog's mercury <i>Mercurialis perennis</i> also present.</p>
	
<p>W3 was small fenced deciduous woodland. Ash and sessile oak were the dominant species, with an understory formed largely by bramble, hazel, and hawthorn. Located to the rear of the slurry lagoon (P3).</p>	<p>W4 was a wooded watercourse that steadily widened westwards. It was dominated by mature sessile oak with occasional ash, with an understory of hazel <i>Corylus avellana</i>, hawthorn, field maple <i>Acer campestre</i> and holly. The ground flora included ivy, soft shield fern <i>Polystichum setiferum</i> and heart's tongue fern <i>Asplenium scolopendrium</i>.</p>

Broadleaved Woodlands - W1 to W15



W5 Land south of Ty'n-y-Coed SNCI (see Table 5 above) located of site. The boundary with the site is formed by mature trees and shrub species and intensively managed.



W6 was a continuous line of mature deciduous woodland forming the site boundary and associated with the watercourse. It was characterised by a large number of mature sessile oak.



W7 onsite was located in the corner of the F8. It was sessile oak dominated woodland and fenced. It was joined with Coed Quinnet SNCI (W9). Included lesser celandine, false brome and Hart's tongue fern.



W8 was circa 5m wide mature woodland fenced on both sides and forming part of the field boundary. Sessile oak was the dominant species with hazel, hawthorn, blackthorn, bramble and dog rose.



W9 is Coed Quinnet SNCI and located along the southern boundary of F8 to F10 (see Table 5). The boundary is fenced.



W10 is a small deciduous woodland fenced on both sides, similar I species composition to W8.

Broadleaved Woodlands - W1 to W15



W11 is Betty Lucas Wood SNCI (see Table 5). It borders the site to the south on F12 and F13. It is fenced from the site, but there is circa 5m of encroachment along some stretches. The small stream runs within the woodland along the edge of Site.



W12 is Brook Wood SNCI (see Table 5). It borders the site along the southern boundary of F14 and F15. The River Waycock runs within the woodland on the edge of Site, and continues east within a mature wooded corridor that has also been mapped as W12.



W13 is a small copse dominated by sessile oak with an understory of hawthorn and elder. The ground flora is rank with nettles, and dominated by cock's foot and perennial ryegrass.



W14 a small copse dominated by sessile oak



W15 is Coed Y Cwm SNCI (see Table 5). The boundary with the site is formed by mature sessile and oak and ash.

Plantation Woodland

- 5.20 Newly planted orchard with circa 60 trees with fenced tree guards (TN13).



Image 9: Newly Planted Orchard (TN13)

Mature Trees and Tree Lines

- 5.21 Along the track between TN6 and TN7 were 31x mature trees, many on which were located just within the verge between the track and the established hedges. Apart from a single ash *Fraxinus excelsior*, these were all sessile oak. Three semi-mature ash were located centrally at TN8. The eastern farm contained 26x mature trees (T1 to T26) located centrally in fields. Aside from a single ash, these were also all mature sessile oak (also see bats in trees results below)



Image 10: Mature Trees Along Main Track between TN6 and TN7

- 5.22 Three semi-mature ash were located at TN8 located centrally within F10.



Image 11: Semi-mature Ash, TN8

- 5.23 A total of 7 boundaries were comprised of lines of mature trees, these have been mapped and target noted and described in Table 8 below.

Table 9: Tree Line Descriptions (Target Noted)

<p>TN9 circa 50x sessile oak and occasional ash. Some scattered bramble scrub present.</p>	<p>TN10 circa 50x sessile oak and occasional ash. Some scattered bramble and hawthorn scrub present.</p>

	
<p>TN14 circa 42x mature trees, predominantly sessile oak, with connecting canopies. Occasional dog rose, holly, bramble and hawthorn.</p>	<p>TN16 circa 21 mature trees, mostly sessile oak with a small number of ash and field maple. Partially connected canopies and very little vegetation at base.</p>
	
<p>TN17 circa 28x trees, mostly sessile oak and ash. Partially connected canopies and very little vegetation at base.</p>	<p>TN19 a line of grazed out hazel coppice and open section of watercourse.</p>
	
<p>TN20 line of circa 13x mature sessile oak. Occasional hawthorn and patch of bramble.</p>	<p>TN21 circa 11x open sessile oaks that are remnants of old field boundaries.</p>

Hedgerows



- 5.24 There was a total of 27 hedges across the site 18 (66%) were high value under the HEGs assessment criteria. These are described below in Table 9. Newly planted whips with a membrane




were planted on the southern side of the track between TN6 and TN7, and along the north eastern boundary of TN5.









Image 12: Newly Planted Hedge (TN5)




Table 10: Hedgerows





Ref	Species	Length (m)	Sp. per Av. 30m†	Image, description and REGs 7 ground flora species.	HEGs	Regs
H1	<i>Cm, Fe, Fs, Ia, Ac, Cs, Ul</i>	390	4	 <p>Species rich roadside hedge. Box cut. Bank on roadside. No standard trees.</p>	2	No
H2	<i>Ca, Cm, Fe, Qp, Sn, Ee, Rc, Ac, Ia</i>	182	3	 <p>Species-rich leggy hedge flailed heavily on field side. 10+ mature standard trees with verge on both sides. Honeysuckle, black bryony.</p>	-1	No




Ref	Species	Length (m)	Sp. per Av. 30m†	Image, description and REGs 7 ground flora species.	HEGs	Regs
H3	<i>Fe, Ca, Cm, Qp, Sn, Ul</i>	88	3	 <p>Low banked species rich hedge. Box cut with 6x mature standard trees. Dog's mercury and lords and ladies. Ditch/stream.</p>	-1	No
H4	<i>Ca, Cm, Fe, Ac, Qp, Sc, Ul, Ia, Ti</i>	205	5	 <p>Low banked species rich hedge with stream connected to woodland at both ends. Leggy, managed edge. Dog's mercury, hearts tongue fern and lords and ladies.</p>	1+	No
H5	<i>Qp, Cm, Ac, Ca, Fe, Sn</i>	214	3	 <p>Long central hedge. Narrow, poorly structured and gappy with low bank. Lords and ladies.</p>	3+	No





Ref	Species	Length (m)	Sp. per Av. 30m†	Image, description and REGs 7 ground flora species.	HEGs	Regs
H6	N/A	323	N/A	 <p>Unsurveyed hedge forming western site boundary. Box cut with Qp standard trees x3.</p>	N/A	N/A
H7	<i>Qp, Ca, Cm, Fe, Ps, Ac, Rc, Ia, Sn</i>	199	3	 <p>Species rich box cut hedge with 7x mature standard trees, low bank and offsite ditch. Primrose and lords and ladies.</p>	-2	No
H8	<i>Qp, Cm, Ac, Ps, Sn, Ca, Fe, Qc</i>	248	4	 <p>Poorly structured hedge with dry ditch and low bank.</p>	-3	No
H9	NA	57m	N/A	Short section of native hedge that is a continuation of H7.	-2	No



Ref	Species	Length (m)	Sp. per Av. 30m†	Image, description and REGs 7 ground flora species.	HEGs	Regs
H10	<i>Ac, Sc, Cm, Ps</i>	150	4	 <p>Heavily grazed, leggy, species poor hedge with shallow ditch/flush and low bank. Has good width, height, and connectivity. Single mature sessile oak.</p>	2	No
H11	<i>Ca, Cm, Fe, Qp</i>	157	2	 <p>Leggy, species poor hedge with flowing ditch and low bank. Single mature sessile oak standard.</p>	2	No
H12	<i>Qp, Cm, Ca, Fs, Ps, Sc</i>	149	6	 <p>Species rich leggy but dense hedge, with 7x mature sessile oak standards. Fenced on both sides. Lords and ladies and Hart's tongue.</p>	-1	Yes

Ref	Species	Length (m)	Sp. per Av. 30m†	Image, description and REGs 7 ground flora species.	HEGs	Regs
H13	<i>Fs, Qp, Cm</i>	129	4	 <p>Relatively well structured species poor hedge with flowing ditch, low bank and verge. Seven mature and semi mature beech and sessile oak standards.</p>	2+	No
H14	<i>Sc, Fs, Cm, Ps, Ap, Ca, Rc, Ia, Qp, Ia, Ps</i>	170	5	 <p>Species rich dense and well-structured hedge with bank, ditch and verge. Contained 10+ standards mostly beech and sessile oak. False brome, Hart's tongue, soft shield fern, Lords and ladies.</p>	-1	Yes
H15	<i>Qp, Fs</i>	240	N/A	 <p>Recently coppiced hedge. Fenced with open ditch. 11x mature and semi-mature sessile oak.</p>	N/A	No

Ref	Species	Length (m)	Sp. per Av. 30m†	Image, description and REGs 7 ground flora species.	HEGs	Regs
H16	<i>Qp, Cm, Ca, Fe, Fs, Ia, Sc</i>	260	5	 <p>Species rich dense and well-structured hedge with bank, ditch and verge. Contained 8x beach and sessile oak standards. False brome, primrose, Lords and ladies and wood dock.</p>	-1	Yes
H17	<i>Qp, Cm, Sc, Ca, Fe, Ia</i>	118	3	 <p>Species rich hedge, mostly intact and dense but for one area of open ditch. Had low bank and verge. 4x standard trees. Lords and ladies, Hart's tongue, wood dock and creeping soft grass.</p>	-1	No
H18	<i>Ia, Cm, Rc, Qp</i>	208	3	 <p>Leggy hedge with numerous tall (circa 30) sessile oak. Heavily grazed on F8 side. With dry ditch and low bank. Lords and ladies and Hart's tongue.</p>	-1	No
H19	<i>Ca, Qp, Ap, Cm, Cs, Ia, Rf</i>	48	4		-1	No

Ref	Species	Length (m)	Sp. per Av. 30m†	Image, description and REGs 7 ground flora species.	HEGs	Regs
				Section of species rich hedge that widens into woodland on both sides. Leggy with numerous tall (circa 18) sessile oak. Fenced on both sides with dry ditch and low bank. Honeysuckle, lords and ladies and false brome.		
H20	<i>Sc, Ca, Em, Bp, Qp</i>	260	3	 <p>Species rich with good connectivity but poorly structured hedge. Contained 3x mature sessile oak standards.</p>	2	No
H21	<i>Rf, Cm</i>	93	1	 <p>Well-connected dense hedgerow with gateway gaps and fence along one side and a verge to one side.</p>	3+	No
H22	<i>Cm, Rf, Fe, Ia,</i>	294	1	 <p>Dense hedgerow with fence along both sides. No gaps present and no standard trees.</p>	-3	No

Ref	Species	Length (m)	Sp. per Av. 30m†	Image, description and REGs 7 ground flora species.	HEGs	Regs
H23	<i>Cm, Qp, Ca, Fc, Fe, Qr, Ps</i>	253	4	 <p>Species rich leggy hedge. Hedge has no gaps and good connectivity; a ditch is also present.</p>	-2	No
H24	<i>Cm, Ps, Ca, Ee, Fc, Fe, Ia, Qp</i>	113	6	 <p>Species rich hedge with mature trees and a ditch.</p>	-2	No
H25	<i>Cm, Fe, Ps, Ca, Qp, Qr, Rc</i>	131	4	 <p>Well-connected species rich hedge. Outgrown and leggy with a well-established ditch present.</p>	1	No
H26	<i>Cm, Fe, Ps, Ca, Ee, Ps, Qp, Sn, Ul</i>	154	5		-1	No

Ref	Species	Length (m)	Sp. per Av. 30m†	Image, description and REGs 7 ground flora species.	HEGs	Regs
				Species rich, dense, managed hedge with sessile oak standard trees.		
H27	<i>Cm, Fe, Ps, Ca, Ee, Ps, Qp, Sn, Ul</i>	120	5	 <p>Species rich, dense hedge with wire fence. Box cut. Ditch and bank present.</p>	1	No
H28	<i>Cm, Cm, Qp, Rc</i>	116	2	 <p>Hedge is box cut with wire fence. Mature trees present.</p>	-3	No
<p>Species Key: Ac <i>Acer campestre</i> - Field maple; Cm <i>Crataegus monogyna</i> – Hawthorn; Fe <i>Fraxinus excelsior</i> – Ash; Fs <i>Fagus sylvatica</i> – Beech; Ia <i>Ilex aquifolium</i> - Holly ; Cs <i>Castanea sativa</i> - Sweet chestnut; Ul <i>Ulmus sp.</i> – an elm; Ca <i>Corylus avellana</i> - Hazel; Qp <i>Quercus petraea</i> - Sessile oak; Sn <i>Sambucus nigra</i> – elder; Sc <i>Salix cinerea</i>– grey willow; Ps <i>Prunus spinosa</i> – blackthorn; Ap <i>Acer pseudoplatanus</i> – Sycamore; Bp <i>Betula pendula</i> - Silver Birch ; Qr <i>Quercus robur</i> - English Oak.</p>						

Scrub

- 5.25 A centrally located fenced patch of bramble, elder and hawthorn scrub located within a damp sump was present at TN12. Hart's tongue, lords and ladies, primrose, hemlock water dropwort and yellow flag iris and were present.





Image 13: Patch of Scrub (TN15)




5.26 The remainder of the scrub on site was limited to patches along tree lines and patches at TN11 (Image 6), and TN15 (Image 13).

Ponds

5.27 The water table was very high at the time of survey and all ponds, with the exception of P3, were ephemeral.

Table 11: Ponds

Onsite Ponds – P1 to P6	
	
<p>P1 and P2 were located within W2. They were unvegetated and of low value.</p>	<p>P3 is an active lined slurry lagoon that has been created above ground.</p>

Onsite Ponds – P1 to P6	
 <p>P4 was located offsite. It is an ephemeral depression that lacks aquatic vegetation. Presence of algal mats indicate a high level of nutrient enrichment.</p>	 <p>P5 was located in FX. It was the wettest area of the marshy grassland.</p>
 <p>Pond 6 is a Small flush/pond 8m x 20m. Water level very low. Soft rush, hard rush, fools' watercress, creeping bent, Yorkshire fog, greater horsetail and grey willow.</p>	

Rivers and Streams

- 5.28 Two wooded streams form boundaries at TN2 and TN3. These are headwaters of the river Llancarthan. Woodland ground flora is present along the banks. Occasional partial open areas, for example along H4, contained wetland species yellow flag iris, meadow sweet and hemlock water dropwort.



Image 14: Watercourses TN2 and TN3

- 5.29 There was a flowing straightened watercourse along H11 and H17. This was largely contained within the hedges, except for short open sections. The largest was approximately 10m of open flowing ditch along H17 with great willow herb, water mint, fools water cress, floating sweet grass, creeping buttercup, hard and soft rush, marsh thistle, yellow flag iris and tufted hairgrass.
- 5.30 A 550m section of the River Waycock runs along the southern boundary along the edge of W12. The river is fenced from site and located within mature woodland.
- 5.31 At TN15 was a narrow (less than 1m wide) section of stream fed by ephemeral boundary ditches that emerged towards the southern end of the line of trees TN14. It was fenced on both sides creating an ungrazed area approximately 7m wide. It was a mixture of scrub, rough grassland, marshy grassland and woodland including false brome, lady fern, hard rush, soft rush, hemlock water dropwort, water figwort, marsh thistle, wavy bittercress, fools' watercress, ribwort plantain, cock's foot, curled dock and creeping buttercup. This narrow stream continued along the edge of W11, before entering the river Waycock at the southern end of H25.
- 5.32 Another tributary of the Waycock enters the river in the southeast corner of the Site. It is fed by a small stream along the edge of W15 and flowing ditches along H28, H26 and TN21, at TN19 there is a short open section along the boundary.



Image 15: Sections of Watercourse at TN2 and TN3

Additional Notes

- 5.33 At TN18 was an area of log and brash habitat piles of a variety of ages

Fauna

Badger

- 5.34 No records of badger were returned from the desk study. Suitable habitat exists across the Site, however, no evidence was recorded.

Bats Roosts

Trees

- 5.35 There were numerous mature trees across the site with low to high bat potential within lines of trees, hedgerows, and woodlands across the site. These are all being retained and so no further assessment was necessary.
- 5.36 Those trees located centrally were assessed from the ground (T1 to T26) as these are the most likely to be impacted and the results are shown in Table 11. All have been retained within the proposals so no further work was necessary.
- 5.37 Between TN6 and TN7 there were 31x Sessile Oak and a single Ash located along the main track and fenced outside the field compartments. These were rapidly assessed during the Phase 1; four were low potential including the Ash, and the remainder negligible. The 3x ash at TN8 were negligible. These have also been retained within the proposals so no further work was necessary.

Table 12: Tree Roost Assessment

Tree Ref	Species	Bat Features	Bat Suitability
T1	Sessile Oak	Trunk cavity	Moderate
T2	Ash	Terminal branch cavity, 4m (s)	Moderate
T3	Sessile Oak	Numerous cavities and features	High
T4	Sessile Oak	No obvious features, age precaution	Low
T5	Sessile Oak	Rot hole (NW), near powerlines	Moderate
T6	Sessile Oak	No obvious features, age precaution	Low
T7	Sessile Oak	Rot hole 8m (S), butt rot, multiple other features	High
T8	Sessile Oak	Socket cavity (SW), split beam (E)	Moderate
T9	Sessile Oak	Large trunk rot hole, other low features	Moderate
T10	Sessile Oak	Multiple features	High
T11	Sessile Oak	Possible rot hole	Low
T12	Sessile Oak	Split branch centre	Low

Tree Ref	Species	Bat Features	Bat Suitability
T13	Sessile Oak	Split branch centre, rot hole (N)	Moderate
T14	Sessile Oak	N/A	Negligible
T15	Sessile Oak	No obvious features, age precaution	Low
T16	Sessile Oak	No obvious features, age precaution	Low
T17	Sessile Oak	No obvious features	Negligible
T18	Sessile Oak	Spit branch	Low
T19	Sessile Oak	Lifted bark	Low
T20	Sessile Oak	Multiple cavities	High
T21	Sessile Oak	No obvious features	Negligible
T22	Sessile Oak	No obvious features	Negligible
T23	Sessile Oak	Heartwood exposed, cavities	Medium
T24	Sessile Oak	N/A	Negligible
T25	Ash	N/A	Negligible
T26	Sessile Oak	No obvious features, age precaution	Low

Buildings

- 5.38 A single ruined old stone building was present on the eastern edge of the site (B1). The barn had no roof. The thickness of the walls and the numerous cracks and cavities offer potential for crevice dwelling bat species. The building is being retained on the edge of site so no further surveys were required.



Image 16: Ruined Building, B1

Bat Foraging and Commuting

- 5.39 Twenty-two records of bats were returned from within 2km of the Site during the desk study. The confirmed species recorded were common pipistrelle, soprano pipistrelle, noctule, brown long eared, serotine and lesser horseshoe (three records), along with species of the genus *Myotis*.
- 5.40 The habitat on site had a high degree of connectivity along woodland edge, hedgerows, tree lines and river corridors, and it is well connected with the wider landscape including high value neighbouring ancient woodland. Foraging opportunities also exist along the woodland edges and watercourses. The habitat onsite is of high suitability for bats.
- 5.41 South Wales forms part of the core UK area for two of the UKs rarer bat species lesser and greater horseshoe bats, and suitable habitat for both species is present across the site. Western Barbastelle are also likely to be present given the nearby ancient/mature woodland resource.

Breeding Birds

- 5.42 9 protected species under Schedule 1 of the WCA were returned following consultation with SEWBRC within 2 km of the survey area. Of these species only one was recorded on the site during bird scoping surveys, red kite, with all records being flyovers. The species is known to breed locally in plantation and native woodland.
- 5.43 A total of 55 species were recorded across the bird scoping surveys, of which 26 amber or red listed species (BOCC5 and Welsh status list) were recorded and are listed alongside their conservation status below in table 12. The majority of bird species recorded were noted from site and field boundary features, including hedgerows and woodland. Species recorded along these features were displaying breeding behaviour such as singing, carrying food or nestbuilding. Species such as skylark, meadow pipit and gulls were recorded from central field parcels, foraging or in the case of skylark, displaying breeding behaviour. The remaining species records were flyovers for species including swift, swallow and buzzard.
- 5.44 Skylark were the only notable breeding species recorded within the proposed works areas, that utilise these grassland habitat types for breeding. A detailed survey for skylark was undertaken in Spring 2022 (April 24th) to assess their breeding extent across the Site. No singing males were recorded from the Oaklands Farm and Redlands Farm areas of the site where panels will be installed, with all breeding activity limited to the large central field (F4) at Pancross Farm. This is typical of preferred skylark breeding habitat in large fields.
- 5.45 A total of 9 singing males were recorded in F4. In addition to this the thermal camera recorded 6 non-singing birds. 3 of these were identified as fledged juveniles, with a female type bird feeding them and another single fledged bird was being fed by another female. This was at the highest point of the field. No other evidence of breeding or nesting was found using the thermal camera.
- 5.46 The results of the targeted skylark survey show that at least two successful breeding attempts had occurred in 2022, therefore confirming two breeding pairs. The presence of 9 singing males shows that the elevated and open topography of F4, with a medium length spring Lolium sward is favoured over other areas of the Site. Management is likely to be the limiting factor of skylark breeding success in F4. Two early established pairs had managed to rear a successful brood, however, the field is regularly cut for silage from May and throughout the summer and it is unlikely that nests established from late April onwards would be successful.

5.47 The locations of protected and or notable species recorded during the scoping surveys are presented in *Figures 8, 9 and 10*.

Table 13: Amber and Red listed birds recorded on site

Species	BOCC5 Conservation Status	Welsh Status 1995-2018 ²³
Bullfinch	Amber	Green- Population holding
Buzzard	Green	Amber- Population holding
Dunnock	Amber	Green- 35% increase from baseline
Grey wagtail	Amber	Amber- Population slight decrease
Herring gull	Red	Amber- breeding overall decrease, non-breeding increase
House martin	Red	Green- Population holding
House sparrow	Red	Amber- 82% increase from baseline, scarce distribution
Kestrel	Amber	Amber- Poor data- Scarce Welsh breeder
Lesser black-backed gull	Amber	Amber- Slight increase
Linnet	Red	Red- 18% decrease from baseline
Mallard	Amber	Amber- 43% decrease from baseline
Meadow pipit	Amber	Amber- 9% decrease from baseline
Mistle thrush	Red	Amber- Increasing
Red kite	Green	Amber- Increasing
Skylark	Red	Amber- Population slight decrease
Song thrush	Amber	Amber- 27% increase from baseline
Sparrowhawk	Amber	No classification- Common and widespread in Wales according to bird report
Spotted flycatcher	Red	Red- Declining
Starling	Red	Red- 68% decline from baseline
Stock dove	Amber	Green- 46% increase from baseline
Swift	Red	Red- 69% decline from baseline
Whitethroat	Amber	Decline >25%and<50%
Willow warbler	Amber	Red- Increasing decline
Woodpigeon	Amber	Green- 19% increase from baseline

²³ Welsh Ornithological Society (2019) *Welsh Bird Report No. 32: 2018*.

Species	BOCC5 Conservation Status	Welsh Status 1995-2018 ²³
Wren	Amber	Green- 30% increase from baseline
Yellowhammer	Red	Red- 62% decrease from baseline

Great Crested Newt (GCN)

- 5.48 The HSI calculation results are detailed in Table 13 below. Pond images are shown in Table 10. All ponds were below average to poor suitability for GCN.

Table 14: Great Crested Newt Habitat Suitability Assessment

Pond Ref	Description	HSI Score
P1	50m ² , dries annually, water quality "Bad", 90% shaded, negative waterfowl, negative fish, 4+ ponds within 1000m, terrestrial habitat good, macrophytes zero.	0.38 - Poor
P2	60m ² , dries annually, water quality "Bad", 90% shaded, negative waterfowl, negative fish, 4+ ponds within 1000m, terrestrial habitat good, macrophytes zero.	0.38 - Poor
P3	Active lined slurry lagoon.	Unsuitable
P4	140m ² , dries annually, water quality "Bad", 0% shaded, negative waterfowl, negative fish, 4+ ponds within 1000m, terrestrial habitat good, macrophytes zero.	0.46 - Poor
P5	80m ² , dries annually, water quality "Moderate", 50% shaded, negative waterfowl, negative fish, 4+ ponds within 1000m, terrestrial habitat good, macrophytes 50%.	0.59 – Below Average
P6	160m ² , dries annually, water quality "bad", 50% shaded, negative waterfowl, negative fish, 4+ ponds within 1000m, terrestrial habitat good, macrophytes 50%.	5.49 - Poor

- 5.50 The closest GCN record to site in the last 10 years was 980m. Prior to 10 years the closest was 862m. The ponds were dry in May 2020, 2021 and 2022, and no eDNA surveys were possible. The habitat is sub-optimal for GCN, and they are presumed absent from site.

Reptiles

- 5.51 Three records of grass snake were returned from within 2km of the Site. No suitable habitat was present for the EPS reptiles smooth snake and sand lizard, nor was there suitable habitat for adder on site. Habitat suitable for common reptiles was restricted to areas fenced outside of grazing enclosures, within the base of hedges/verges and along woodland edges. The management and grazing of the central field areas make them sub-optimal for reptiles for hibernation and reproduction. There is potential foraging habitat during the active season for reptiles within the semi-improved grassland fields (F10 and F11) prior to cuts, and within peripheral habitats on the edges of the fields (e.g. TN11) particularly where fenced. The habitat on site is sub-optimal for

supporting a large and significant reptile population. It is, however, likely to support small some small, localised populations.

Hazel Dormouse

- 5.52 There were no records of dormice within 2km of the Site returned during the desktop study; however, the distribution of dormice in South Wales is not complete enough for the lack of records to be significant, and populations are known to be present across the region.
- 5.53 The proximity of high suitability woodland habitats adjacent to the site, and the wooded corridors and hedgerows are optimal for dormice. The presence of dormice of site is considered highly likely. Given the extent of suitable and connected dormice habitat present, presence has been assumed within all boundary features.

Otter

- 5.54 No records of otter were returned from the desk study. The River Waycock which lies adjacent to the south boundary and the Nant Llandcarfan which is 31m west of the site are highly likely to support otter. The streams along TN3 and TN2 and the connecting watercourses in the east of the site along W11/H25 and along W15 and TN20/21, are also likely to form part of an otter territory. Otter presumed to be present on site along suitable features.

APPENDIX A – NATURE CONSERVATION LEGISLATION

The Conservation of Habitats and Species Regulations (“The Habitats Regulations”) (Amendment) 2012

European Protected Sites

The Habitats Regulations ratifies into UK law the “Habitats Directive” (92/43/EEC) and the “Birds Directive” (79/409/EEC). It places a duty on the Secretary of State to propose a list of sites which are important for species listed in Annex I and II of the Habitats Directive respectively to the European Commission. Once the Commission and EU Member States have agreed that the sites submitted are worthy of designation, they are identified as Sites of Community Importance (SCIs). The EU Member States must then designate these sites as Special Areas of Conservation (SACs) within six years.

The Regulations require the compilation and maintenance of a register of European sites to include SACs as well as Special Protection Areas (SPAs) designated for birds and sites designated as internationally important wetlands under the Ramsar Convention known as “Ramsar Sites”. These three designations form a collective Europe wide network of internationally protected sites known as Natura 2000. All European sites are also designated under UK law as Sites of Special Scientific Interest (SSSIs; please see below).

Habitats Regulation Assessment

There is a requirement under EU law that Member States’ take measures to reach and maintain European Protected Sites’ at Favourable Conservation Status (FCS). An Appropriate Assessment is required for plans or projects that may potentially damage a European Protected Site. This is based on an assessment against a given European Protected Site’s Conservation Objectives. The process is commonly known as a Habitats Regulations Assessment (HRA).

The HRA must be conducted by, or on behalf of, the Competent Authority. The HRA process assesses plans or projects alone or in combination. It involves a four stage approach as follows:

- Stage One: Screening - also known as the Test of Likely Significant Effect (TOLSE). If the Competent Authority cannot screen out a *likely significant effect*, an Appropriate Assessment is required.
- Stage Two: Appropriate Assessment - the Competent Authority will only agree to plans or projects that will not affect the *integrity* of a European site also known as the “Integrity Test”.
- Stage Three: Alternative Solutions - assesses any alternative solutions of a potentially damaging plan or project that failed the Integrity Test, and if it is determined there are no alternative solutions, the project cannot be agreed to and it will either need to be changed or refused.
- Stage Four: The final stage may allow a plan or project to proceed if after failing stage three if it is for Imperative Reasons of Overriding Public Interest, and only if suitable compensatory measures are secured.

Any plan or project that may have a potentially damaging effect on a transient species or the habitat on which it relies (for example bats or birds), that is both a Qualifying Features of a

European Protected Site and considered *functionally linked* with a European Protected Site, are required under law to be considered as part of any HRA process.

European Protected Species

The Habitats Regulations includes a list of animals and plant species taken from the Annex IV of the Habitats Directive that have a natural range which includes any area in Great Britain. These are collectively known as European Protected Species (EPS). The regulations make it an offence to deliberately capture, kill, disturb, take or destroy eggs of, or damage or destroy a breeding or resting place of animals listed in Schedule 2 of the Regulations, and to pick, collect, cut, uproot or destroy wild plants listed in Schedule 5 of the Regulations. All listed EPS are shown in Table 1 below. The Regulations also protect these species alive or dead and parts thereof from various forms of possession and trade.

Table 1: The Habitats Regulations Schedule 2 and Schedule 5 species

Schedule 2 – European Protected Species of Animals		Schedule 5 – European Protected Species of Plants	
Common name	Scientific name	Common name	Scientific name
Horseshoe bats – all species	<i>Rhinolophidae</i>	Shore dock	<i>Rumex rupestris</i>
Bats – all species	<i>Vespertilionidae</i>	Killarney fern	<i>Trichomanes speciosum</i>
Large blue butterfly	<i>Maculinea arion</i>	Early gentian	<i>Gentianella anglica</i>
Wild cat	<i>Felis silvestris</i>	Lady's-slipper	<i>Cypripedium calceolus</i>
Dolphins, porpoises and whales – all species	<i>Cetacea</i>	Creeping marshwort	<i>Apium repens</i>
Hazel dormouse	<i>Muscardinus avellanarius</i>	Slender naiad	<i>Najas flexilis</i>
Pool frog	<i>Rana lessonae</i>	Fen orchid	<i>Liparis loeselii</i>
Sand lizard	<i>Lacerta agilis</i>	Floating-leaved water plantain	<i>Luronium natans</i>
Fisher's estuarine moth	<i>Gortyna borelii lunata</i>	Yellow marsh saxifrage	<i>Saxifraga hirculus</i>
Great crested newt	<i>Triturus cristatus</i>		
Otter	<i>Lutra lutra</i>		
Lesser Whirlpool Ram's-horn snail	<i>Anisus vorticulus</i>		
Smooth snake	<i>Coronella austriaca</i>		
Sturgeon	<i>Acipenser sturio</i>		
Natterjack toad	<i>Bufo calamita</i>		

Schedule 2 – European Protected Species of Animals		Schedule 5 – European Protected Species of Plants	
Marine turtles	<i>Caretta caretta</i> <i>Chelonia mydas</i> <i>Lepidochelys kempii</i> <i>Eretmochelys imbricata</i> <i>Dermochelys coriacea</i>		

These actions may be made lawful in certain circumstances through the granting of licences by the appropriate authority (Natural Resources Wales). Licences must only be granted after the appropriate authority is satisfied that no satisfactory alternatives are available. In most circumstances, licences are only applied for and granted following full planning permission.

In determining whether or not to grant a licence Natural Resources Wales must apply the requirements of The Conservation of Habitats and Species Regulations 2012 (amendment) and, in particular, the three derogation tests:

- Test 1: A licence can be granted for the purposes of “preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment”.
- Test 2: The appropriate authority shall not grant a licence unless they are satisfied “that there is no satisfactory alternative”.
- Test 3: The appropriate authority shall not grant a licence unless they are satisfied “that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (WCA) (as amended) is the principal legislation providing protection for wildlife in the UK. It prescribes legislation for wild birds, other animals, wild plants and non-native species. In addition, it provides for the designation of Sites of Special Scientific Interest (SSSI) in Wales.

Wild birds

The Act makes it an offence (with exception to species listed in Schedule 2) to intentionally:

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

For birds listed on Schedule 1 of the Act, protection extends to offences relating to disturbance of these birds while at their nests or their dependent young.

Other animals

The WCA (as amended) makes it an offence to (subject to exceptions) intentionally or recklessly kill, injure or take wild animals listed on Schedule 5 of the Act. For some species, the protection extends to interference with places used for shelter or protection, or intentionally disturbing

animals occupying such places. These species are regarded as “fully protected” and as well as the EPS species listed above include the mammal species water vole *Arvicola terrestris*, pine marten *Martes martes* and red squirrel *Sciurus vulgaris* as well as selected others from a range of species groups including, fish, butterflies, hemipteran bugs, beetles, crickets, dragonflies, moths, spiders, crustaceans, sea-mats, molluscs, Annelid worms and sea anemones (and allies).

There are seven species on Schedule 5 of the Act that not fully protected but are still protected against killing and injuring these include the common reptile species slow worm *Anguis fragilis*, viviparous lizard *Lacerta vivipara*, grass snake *Natrix natrix* and adder *Vipera berus*.

The Act prohibits certain methods of killing, injuring, or taking wild animals, and numerous species are protected against sale only as well as other variations for example Atlantic stream (white-clawed) crayfish *Austropotamobius pallipes* are protected against taking and sale.

Vascular plants, bryophytes, lichens and fungi

With regards to native flora the Act makes it an offence to (subject to exceptions) intentionally pick, uproot or destroy any wild plant listed in Schedule 8. Similarly, the Act prevents the sale, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Non-native species

The Act contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9 in England and Wales.

Sites of Special Scientific Interest

The Act provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs). These sites can be identified for their flora, fauna, geological or physiological interest. In Wales, the power to confirm an SSSI lies with Natural Resources Wales.

Laws protecting areas designated as SSSIs are described in Sections 28 to 33 of Part 2 of the Wildlife and Countryside Act 1981 (as amended). SSSIs are the principle statutory designation of sites in the UK and offences are enforced through Natural Resources Wales. Offences include the following:

SSSI owners and occupiers

- carrying out, causing or allowing operations likely to damage an SSSI without Natural Resources Wales consent.
- failing to keep to a management notice.
- failing to let us know about a change in ownership or occupation of land in an SSSI.

Public bodies

- carrying out or authorising operations likely to damage an SSSI without meeting the requirements to notify Natural Resource Wales.
- failing to minimise any damage to an SSSI and if there is any damage, failing to restore it to its former state so far as is reasonably practical and possible.

Any person

- intentionally or recklessly damaging, destroying or disturbing any of the habitats or features of an SSSI.
- intentionally or recklessly damaging, destroying, obscuring or taking down a site notice put up on land within an SSSI.
- preventing a Natural Resources Wales officer lawfully accessing an SSSI.

Protection of Badgers Act 1992

Badgers and their setts are protected under the Protection of Badgers Act 1992. This act is based on the need to protect badgers from persecution by baiting and deliberate harm or injury.

The act makes it an offence to:

- intentionally capture, kill or injure a badger;
- damage, destroy or block access to their setts;
- disturb badgers in setts;
- treat a badger cruelly;
- deliberately send or intentionally allow a dog into a sett; and
- bait or dig for badgers.

A sett is defined as:

“Any structure or place that displays signs indicating current use by a badger”.

Environment (Wales) Act 2016

Section 6 of the Environment (Wales) Act 2016 imposes a duty on every public authority to maintain and enhance biodiversity in exercising its functions, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions (S6 duty). Resilience of ecosystems is accounted by the following aspects; diversity between and within ecosystems; the connections between and within ecosystems; the scale of ecosystems; the condition of ecosystems (including their structure and functioning); and the adaptability of ecosystems.

Section 7 of the Environment (Wales) Act 2016 requires the Welsh Ministers to publish a list of habitats and species that are of principal importance for the conservation and enhancement of biodiversity in Wales. The list (including 55 habitats and 560 species) has been drawn up in consultation with Natural Resource Wales and draws upon the UK BAP List of Priority Species and Habitats. The section 7 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 6 of the Environment (Wales) Act 2016.

Planning Policy Wales (2018) (PPW)

The Planning Policy Wales (2018) sets out the Welsh Government's planning policy for Wales. As such, the PPW must be a material consideration for local authorities when considering planning decisions. The following points highlight those policies/statements which particularly relate to ecology/biodiversity and the planning system:

Policy 5 – Distinctive and Natural Places

Biodiversity and Ecological Networks

5.42 The planning system has a key role to play in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement. Development plan strategies, policies and individual development proposals must take into account the need to:

- promote the conservation of biodiversity, in particular the conservation of wildlife and habitats;
- ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;
- ensure statutorily designated sites are properly protected and managed;
- safeguard protected species; and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil; and
- seek enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks.

Maintaining and Enhancing Biodiversity

5.58 Planning authorities should protect and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are minimised and mitigated, by:

- ensuring that features and elements of biodiversity or green infrastructure value are retained on site wherever possible, and enhanced or created where appropriate, by adopting best practice site design and green infrastructure principles; and
- when all other options have been exhausted, and where modifications, alternative sites, conditions or obligations are not sufficient to secure beneficial environmental outcomes, offsite compensation for unavoidable damage should be sought.

Local Nature Reserves

Local Nature Reserve (LNR) is a statutory designation made under Section 21 of the National Parks and Access to the Countryside Act 1949.

Local authorities have the powers to acquire, declare and manage LNRs. Parish and town councils can declare LNRs providing power is given by the district or county council. LNRs may or may not have other statutory designations such as SSSI status. LNRs must be controlled by the local authority through ownership, lease or agreement with the owner. The main aim must be

to care for the natural features which make the site special. LNRs are of local, but not necessarily national, importance.

LNRs are usually owned by local authorities, with management often passed onto other organisations such as County Wildlife Trusts etc. They often have good public access and facilities. There is no legal necessity to manage an LNR to any set standard but management agreements and plans often exist. Protection of LNRs is usually provided through local planning policy and through local bylaws.

Non-Statutory Protected Local Sites

Non-statutory Designated Sites are sites designated by local authorities which fall outside the statutory criteria for designation. They are policy protected and included in the Planning Policy Wales (PPW). Local Planning Authorities should set criteria based policies against which proposals for developments on or affecting protected wildlife sites should be judged. Non-statutory sites are given various names including County Wildlife Sites (CWS), Sites of Importance for Nature Conservation (SINC) and Local Wildlife Sites (LWS). A search of the Ancient Woodland Inventory is also included here.

Hedgerows

Hedgerows are designated as Habitats of Principal Importance under the Environment (Wales) Act 2016. The Planning Policy Wales (PPW) emphasises the preservation, restoration and re-creation of priority habitats and ecological networks. Hedgerows are important components of ecological networks linking other important habitats and designated sites.

Hedgerows also receive statutory protection under the Hedgerow Regulations 1997 made under Section 97 of the Environment Act 1995, which came into force in 1997. The regulations introduced new arrangements for local planning authorities in England and Wales to protect important hedgerows in the countryside, by controlling their removal through a system of notification. Important hedgerows are defined by complex assessment criteria, which draw on biodiversity features, historical context and the landscape value of the hedgerow.

Local Biodiversity Action Plan (LBAP)

Local Biodiversity Action Plans (LBAP) identify habitat and species conservation priorities at a local level (typically at the County level), and are usually drawn up by a consortium of local Government organisations and conservation charities.

Birds of Conservation Concern (BoCC)

The Birds of Conservation Concern (BoCC) is jointly prepared by the British Trust for Ornithology (BTO), Joint Nature Conservation Committee (JNCC) and The Royal Society for the Protection of Birds (RSPB).

The report classifies birds according to the extent that they are known to be declining. The classifications are split into groups, Red, Amber and Green, with species classified as Red being those with the greatest declines. The criteria for classifications are presented in *Table 2*.

Table 2: BoCC species classification criteria

Red List Criteria	Amber List Criteria	Green List Criteria
Global Conservation Status - Species listed by BirdLife International as being Globally Threatened using IUCN criteria.	European Conservation status - Categorised as a Species of European Conservation Concern.	All regularly occurring species that do not qualify under any of the red or amber criteria are green listed.
Historical Decline - A severe decline in the UK between 1800 and 1995, without substantial recent recovery.	Historical Decline – Recovery - Red listed for Historical Decline in a previous review but with substantial recent recovery (more than doubled in the last 25 years).	Includes those species listed as recovering from Historical Decline in the last review that have continued to recover and do not qualify under any of the other criteria.
Breeding Population Decline - Severe decline in the UK breeding population size, of more than 50%, over 25 years or the entire period used for assessments since the first BoCC review, starting in 1969 (“longer-term”).	Breeding Population Decline - As for red list criteria and, but with moderate decline (by more than 25% but less than 50%).	
Non-breeding Population Decline - Severe decline in the UK non-breeding population size, of more than 50%, over 25 years or the longer-term.	Non-breeding Population Decline - As for red list criteria and, but with moderate decline (by more than 25% but less than 50%).	
Breeding Range Decline - Severe decline in the UK range, of more than 50%, as measured by number of 10 km squares occupied by breeding birds, over 25 years or the longer-term.	Breeding Range Decline - As for red list criteria and, but with moderate decline (by more than 25% but less than 50%).	
	Rarity - UK breeding population of less than 300 pairs, or non-breeding population of less than 900 individuals.	
	Localisation - At least 50% of the UK breeding or non-breeding population found in 10 or fewer sites.	
	International Importance - At least 20% of the European breeding or non-breeding population found in the UK.	

APPENDIX B

Species records within Site boundary

Species	Conservation Status	Total Number of Records within 2km	Date of records
Birds			
Blackbird <i>Turdus merula</i>	BDir2.2, LBAP	3	20/03/2015
Blue Tit <i>Cyanistes caeruleus</i>	Bern, LBAP	1	05/12/2014
Bullfinch <i>Pyrrhula pyrrhula</i>	S7, UKBA, WBR, LBAP	1	20/03/2015
Buzzard <i>Buteo buteo</i>	CITES, LBAP	1	20/03/2015
Chiffchaff <i>Phylloscopus collybita</i>	LBAP	1	23/05/2015
Dunnock <i>Prunella modularis</i>	Bern, S7, UKBA, LBAP	1	23/05/2015
Goldfinch <i>Carduelis carduelis</i>	Bern, LBAP	1	15/07/2014
Greenfinch <i>Chloris chloris</i>	Bern, LBAP	1	03/01/2016
Grey Wagtail <i>Motacilla cinerea</i>	Bern, UKBR, LBAP	1	2014 and 2015
House Martin <i>Delichon urbicum</i>	Bern, UKBA, WBA, LBAP	2	2014
House Sparrow <i>Passer domesticus</i>	S7, UKBR, WBA, LBAP	2	20/03/2015
Kestrel <i>Falco tinnunculus</i>	Bern, CITES, S7, UKBA, WBR, LBAP	1	20/03/2015
Long-tailed Tit <i>Aegithalos caudatus</i>	WBA	1	20/03/2015
Nuthatch <i>Sitta europaea</i>	Bern, LBAP	1	2014 and 2015
Pied Wagtail <i>Motacilla alba subsp. yarrellii</i>	Bern, LBAP	2	20/03/2015
Reed Bunting <i>Emberiza schoeniclus</i>	Bern, S7, UKBA, WBA, LBAP	1	2014 and 2015

Species	Conservation Status	Total Number of Records within 2km	Date of records
Starling <i>Sturnus vulgaris</i>	BDir2.2, Bern, S7, UKBR, WBR, LBAP	2	15/07/2014
Yellowhammer <i>Emberiza citrinella</i>	Bern, S7, UKBR, WBR, LBAP	1	2014 and 2015
Mammals			
Hare <i>Lepus europaeus</i>	S7, LBAP	1	08/08/2009 08/08/2009
Grey squirrel <i>Sciurus carolinensis</i>	INNS, WCA9	2	2014 and 2015
Plants			
Agrimony <i>Agrimonia eupatoria</i>	LBAP, LI	1	15/07/2014
Bluebell <i>Hyacinthoides non-scripta</i>	WCA8, LBAP, LI	1	08/08/2009
Common Fleabane <i>Pulicaria dysenterica</i>	LBAP, LI	1	08/08/2009
Common Reed <i>Phragmites australis</i>	LBAP, LI	1	15/07/2014
Dogwood <i>Cornus sanguinea</i>	LI	1	15/07/2014
Early Dog-violet <i>Viola reichenbachiana</i>	LI	1	08/08/2009
Early-purple Orchid <i>Orchis mascula</i>	LBAP, LI	50	15/04/2017
Field Maple <i>Acer campestre</i>	LI	2	2009 and 2014
Glaucous Sedge <i>Carex flacca</i>	LI	1	08/08/2009
Hard Rush <i>Juncus inflexus</i>	LI	2	2009 and 2014
Soft Shield-fern <i>Polystichum setiferum</i>	LI	1	08/08/2009
Spindle <i>Euonymus europaeus</i>	LI	1	08/08/2009
Wood Anemone <i>Anemone nemorosa</i>	LI	1	08/08/2009

Species	Conservation Status	Total Number of Records within 2km	Date of records
Wood Speedwell <i>Veronica montana</i>	LI	1	08/08/2009
Wood-sedge <i>Carex sylvatica</i>	LI	1	08/08/2009
Insects			
Cinnabar <i>Tyria jacobaeae</i>	S7, LBAP	1	15/07/2014
Large Red-Tailed Bumblebee <i>Bombus lapidarius</i>	LBAP	1	15/07/2014
Common Darter <i>Sympetrum striolatum</i>	LBAP, LI	1	15/07/2014
Common Blue Damsel fly <i>Enallagma cyathigerum</i>	LBAP, LI	1	15/07/2014

Status Key: S7 = Environment (Wales) Act 2016 (Section 7). BDir2.2 = EU Birds Directive, LBAP = Local Biodiversity Action Plan species for the listed area. UKBR = RSPB UK Birds Red List (not based on IUCN criteria). UKBA = RSPB UK Birds Amber List (not based on IUCN criteria). WBR = RSPB Welsh Birds Red List (not based on IUCN criteria). WBA = RSPB Welsh Birds Amber List (not based on IUCN criteria). CITES = Convention on International Trade in Endangered Species of Wild Fauna and Flora. BERN = Bern Convention on the Conservation of European Wildlife and Natural Habitats. LI = Locally Important within the listed area. WACA8= Wildlife & Countryside Act 1981 Schedule 8 (Plants which are protected). WACA9 = Wildlife & Countryside Act 1981 Schedule 9 (Non-native animals and plants which are established in the wild). INNIS = Invasive Non-native Species.

Protected Species records within 2km

Species	Conservation Status	Total Number of Records within 2km	Location / Minimum distance of records from site boundary
Birds			
Barn Owl <i>Tyto alba</i>	WCA1.	3	1487m
Fieldfare <i>Turdus pilaris</i>	WCA1.1, WCA9	9	684m
Goshawk <i>Accipiter gentilis</i>	WCA1.1	1	684m
Hobby <i>Falco subbuteo</i>	WCA1.1	1	1640m
Kingfisher <i>Alcedo atthis</i>	WCA1.1	1	1640m
Merlin <i>Falco columbarius</i>	WCA1.1	1	1640m

Species	Conservation Status	Total Number of Records within 2km	Location / Minimum distance of records from site boundary
Peregrine <i>Falco peregrinus</i>	WCA1.1	2	1204m
Quail <i>Coturnix coturnix</i>	WCA1.1, WCA9	1	1640m
Red Kite <i>Milvus milvus</i>	WCA1.1	7	496m
Redwing <i>Turdus iliacus</i>	WCA1.1	11	1385m
Amphibians			
Great crested newt <i>Natrix helvetica</i>	EPS, WCA Sch5	3	1385m
Reptiles			
Grass snake <i>Natrix helvetica</i>	WCA Sch5	3	1385m
Plants			
Himalayan Balsam <i>Impatiens glandulifera</i>	WCA9	1	684m
Japanese Knotweed <i>Fallopia japonica</i>	WCA9	8	795m
<i>Montbretia Crocosmia</i>	WCA9	1	2337m
Three-cornered Garlic <i>Allium triquetrum</i>	WCA9	2	684m
Variegated Yellow Archangel <i>Lamiastrum galeobdolon subsp. argentatum</i>	WCA9	2	1432m
Wall Cotoneaster <i>Cotoneaster horizontalis</i>	WCA9	1	2337m

Status Key: EPS = European Protected Species. WCA = Wildlife and Countryside Act 1981 (as amended). Sch1 Schedule 1 of WCA, 1981, Sch5 = Schedule 5 of WCA, Sch9 = Schedule 9 of WCA. NERC = Natural Environment and Rural Communities Act Section 41. UKPS = UK Biodiversity Action Plan Priority Species. NR = Nationally Rare.

Species Statuses

Scientific Name	English Name	LBAP	Locally Important	Env. Act Wales (2016)	BoCC Amber (Wales)	BoCC Red (Wales)
Birds						

<i>Accipiter nisus</i>	Sparrowhawk	*				
<i>Aegithalos caudatus</i>	Long-tailed Tit				*	
<i>Alauda arvensis</i>	Skylark	*	*	*	*	
<i>Anas platyrhynchos</i>	Mallard	*			*	
<i>Anthus pratensis</i>	Meadow Pipit	*			*	
<i>Anthus trivialis</i>	Tree Pipit	*	*	*	*	
<i>Apus apus</i>	Swift	*			*	
<i>Ardea cinerea</i>	Grey Heron	*				
<i>Buteo buteo</i>	Buzzard	*				
<i>Carduelis carduelis</i>	Goldfinch	*				
<i>Certhia familiaris</i>	Treecreeper	*				
<i>Chloris chloris</i>	Greenfinch	*				
<i>Chroicocephalus ridibundus</i>	Black-headed Gull	*		*		*
<i>Columba oenas</i>	Stock Dove	*				
<i>Corvus corax</i>	Raven	*	*			
<i>Cyanistes caeruleus</i>	Blue Tit	*				
<i>Delichon urbicum</i>	House Martin	*			*	
<i>Dendrocopos major</i>	Great Spotted Woodpecker	*				
<i>Emberiza citrinella</i>	Yellowhammer	*	*	*		*
<i>Emberiza schoeniclus</i>	Reed Bunting	*	*	*	*	
<i>Falco tinnunculus</i>	Kestrel	*	*	*		*
<i>Gallinago gallinago</i>	Snipe	*	*		*	
<i>Hirundo rustica</i>	Swallow	*			*	
<i>Larus argentatus</i>	Herring Gull	*		*		*
<i>Larus fuscus</i>	Lesser Black-backed Gull	*			*	
<i>Linaria cannabina</i>	Linnet	*	*	*		*
<i>Locustella naevia</i>	Grasshopper Warbler	*	*	*		*
<i>Motacilla alba</i>	Pied Wagtail	*				
<i>Motacilla alba subsp. yarrellii</i>	Pied Wagtail	*				
<i>Motacilla cinerea</i>	Grey Wagtail	*				
<i>Muscicapa striata</i>	Spotted Flycatcher	*	*	*		*
<i>Oenanthe oenanthe</i>	Wheatear	*			*	
<i>Parus major</i>	Great Tit	*				
<i>Passer domesticus</i>	House Sparrow	*	*	*	*	
<i>Passer montanus</i>	Tree Sparrow	*	*	*		*
<i>Periparus ater</i>	Coal Tit	*			*	
<i>Phalacrocorax carbo</i>	Cormorant	*			*	
<i>Phoenicurus phoenicurus</i>	Redstart	*			*	
<i>Phylloscopus collybita</i>	Chiffchaff	*				
<i>Phylloscopus trochilus</i>	Willow Warbler	*				*
<i>Picus viridis</i>	Green Woodpecker	*	*		*	
<i>Prunella modularis</i>	Dunnock	*		*		
<i>Pyrrhula pyrrhula</i>	Bullfinch	*	*	*		*
<i>Regulus regulus</i>	Goldcrest	*			*	
<i>Saxicola rubicola</i>	Stonechat	*	*			
<i>Scolopax rusticola</i>	Woodcock	*	*		*	
<i>Sitta europaea</i>	Nuthatch	*				
<i>Spinus spinus</i>	Siskin	*				
<i>Strix aluco</i>	Tawny Owl	*				
<i>Sturnus vulgaris</i>	Starling	*	*	*		*
<i>Sylvia atricapilla</i>	Blackcap	*				
<i>Sylvia communis</i>	Whitethroat	*			*	
<i>Sylvia curruca</i>	Lesser Whitethroat	*	*			

<i>Turdus merula</i>	Blackbird	*				
<i>Turdus philomelos</i>	Song Thrush	*	*	*	*	
<i>Vanellus vanellus</i>	Lapwing	*	*	*		*
Mammals						
<i>Erinaceus europaeus</i>	Hedgehog	*	*	*		
<i>Lepus europaeus</i>	Hare	*	*	*		
<i>Meles meles</i>	Badger	*	*			
<i>Micromys minutus</i>	Harvest Mouse	*	*	*		
<i>Mustela erminea</i>	Stoat	*	*			
<i>Mustela nivalis</i>	Weasel	*	*			
<i>Mustela putorius</i>	Polecat	*	*	*		
<i>Sorex araneus</i>	Common Shrew	*				
Insects						
<i>Abrostola tripartita</i>	Spectacle	*	*			
<i>Acasis viretata</i>	Yellow-barred Brindle		*			
<i>Acronicta rumicis</i>	Knot Grass	*		*		
<i>Aeshna cyanea</i>	Southern Hawker	*	*			
<i>Aeshna mixta</i>	Migrant Hawker	*	*			
<i>Aglossa pinguinalis</i>	Large Tabby		*			
<i>Agrochola helvola</i>	Flounced Chestnut	*		*		
<i>Agrochola lychnidis</i>	Beaded Chestnut	*		*		
<i>Allophytes oxyacanthae</i>	Green-brindled Crescent	*		*		
<i>Amblyptilia acanthadactyla</i>	Beautiful Plume		*			
<i>Amblyptilia punctidactyla</i>	Brindled Plume		*			
<i>Amphipyra tragopoginis</i>	Mouse Moth	*		*		
<i>Anania crocealis</i>	Ochreous Pearl		*			
<i>Anania stachydalis</i>	Woundwort Pearl	*				
<i>Anax imperator</i>	Emperor Dragonfly	*	*			
<i>Apamea remissa</i>	Dusky Brocade	*		*		
<i>Apeira syringaria</i>	Lilac Beauty		*			
<i>Arctia caja</i>	Garden Tiger	*		*		
<i>Atethmia centrigo</i>	Centre-barred Sallow	*		*		
<i>Bombus hortorum</i>	Small Garden Bumblebee	*	*			
<i>Bombus lapidarius</i>	Large Red Tailed Bumblebee	*	*			
<i>Bombus lucorum</i>	White-Tailed Bumblebee	*	*			
<i>Bombus pascuorum</i>	Common Carder Bee	*	*			
<i>Bombus pratorum</i>	Early Bumblebee	*	*			
<i>Bombus terrestris</i>	Buff-Tailed Bumblebee	*	*			
<i>Brachylochia viminalis</i>	Minor Shoulder-knot	*		*		
<i>Calamotropha paludella</i>	Bulrush Veneer	*				
<i>Callimorpha dominula</i>	Scarlet Tiger	*	*			
<i>Calopteryx virgo</i>	Beautiful Demoiselle	*	*			*
<i>Caradrina morpheus</i>	Mottled Rustic	*		*		
<i>Catoptria margaritella</i>	Silver-stripe Grass-veneer		*			
<i>Catoptria pinella</i>	Pearl Grass-veneer		*			
<i>Celastrina argiolus</i>	Holly Blue	*				
<i>Cepphis advenaria</i>	Little Thorn	*				
<i>Ceramica pisi</i>	Broom Moth	*		*		
<i>Cirrhia icteritia</i>	Sallow	*		*		
<i>Cleorodes lichenaria</i>	Brussels Lace		*			
<i>Clytus arietis</i>	Wasp Beetle	*				
<i>Coenagrion puella</i>	Azure Damselfly	*	*			
<i>Craniophora ligustri</i>	Coronet	*				

<i>Diarsia rubi</i>	Small Square-spot	*		*		
<i>Dolichovespula media</i>	Dolichovespula media	*				
<i>Ecliptopera silaceata</i>	Small Phoenix	*		*		
<i>Enallagma cyathigerum</i>	Common Blue Damselfly	*	*			
<i>Ennomos fuscantaria</i>	Dusky Thorn	*		*		
<i>Ennomos quercinaria</i>	August Thorn	*	*	*		
<i>Epinotia brunnichana</i>	Large Birch Bell		*			
<i>Epirrhoe rivata</i>	Wood Carpet		*			
<i>Eugnorisma glareosa</i>	Autumnal Rustic	*		*		
<i>Euphyia unangulata</i>	Sharp-angled Carpet	*				
<i>Furcula bicuspis</i>	Alder Kitten	*	*			
<i>Hemistola chrysoprasaria</i>	Small Emerald	*		*		
<i>Hepialus humuli</i>	Ghost Moth	*		*		
<i>Hoplodrina blanda</i>	Rustic	*		*		
<i>Hydraecia micacea</i>	Rosy Rustic	*		*		
<i>Ipimorpha retusa</i>	Double Kidney		*			
<i>Ischnura elegans</i>	Blue-tailed Damselfly	*	*			
<i>Leptophyes punctatissima</i>	Speckled Bush-cricket		*			*
<i>Lestes sponsa</i>	Emerald Damselfly	*	*			*
<i>Libellula depressa</i>	Broad-bodied Chaser	*	*			
<i>Libellula quadrimaculata</i>	Four-spotted Chaser	*	*			
<i>Litologia literosa</i>	Rosy Minor	*		*		
<i>Lycia hirtaria</i>	Brindled Beauty	*		*		
<i>Lymantria monacha</i>	Black Arches	*				
<i>Melanchra persicariae</i>	Dot Moth	*		*		
<i>Melanthia procellata</i>	Pretty Chalk Carpet	*	*	*		
<i>Meloe proscarabaeus</i>	Black Oil-beetle			*		
<i>Meloe violaceus</i>	Violet Oil-beetle			*		
<i>Mompha divisella</i>	Neat Cosmet		*			
<i>Mythimna turca</i>	Double Line	*				
<i>Orthetrum cancellatum</i>	Black-tailed Skimmer	*	*			*
<i>Orthosia gracilis</i>	Powdered Quaker	*		*		
<i>Panemeria tenebrata</i>	Small Yellow Underwing	*				
<i>Perizoma albulata</i>	Grass Rivulet	*		*		
<i>Philereme transversata</i>	Dark Umber	*				
<i>Pogonocherus hispidus</i>	Pogonocherus hispidus	*				
<i>Polymixis flavicincta</i>	Large Ranunculus	*				
<i>Pyrausta aurata</i>	Small Purple & Gold		*			
<i>Pyrrhosoma nymphula</i>	Large Red Damselfly	*	*			
<i>Rhizedra lutosa</i>	Large Wainscot	*		*		
<i>Rutpela maculata</i>	Rutpela maculata	*				
<i>Schrankia costaestrigalis</i>	Pinion-streaked Snout		*			
<i>Scotopteryx chenopodiata</i>	Shaded Broad-bar	*		*		
<i>Spilosoma lubricipeda</i>	White Ermine	*		*		
<i>Spilosoma lutea</i>	Buff Ermine	*		*		
<i>Stenocorus meridianus</i>	Stenocorus meridianus	*				
<i>Sympetrum striolatum</i>	Common Darter	*	*			
<i>Tetrix subulata</i>	Slender Ground-hopper	*	*			*
<i>Tholera decimalis</i>	Feathered Gothic			*		
<i>Thumatha senex</i>	Round-winged Muslin	*				
<i>Tiliacea aurago</i>	Barred Sallow	*				
<i>Tiliacea citrigo</i>	Orange Sallow		*			
<i>Timandra comae</i>	Blood-vein	*		*		

<i>Tyria jacobaeae</i>	Cinnabar	*		*		
<i>Venusia blomeri</i>	Blomer's Rivulet	*	*			
<i>Watsonalla binaria</i>	Oak Hook-tip	*		*		
<i>Xanthorhoe ferrugata</i>	Dark-barred Twin-spot Carpet	*		*		
<i>Zeuzera pyrina</i>	Leopard Moth		*			
Plants						
<i>Acer campestre</i>	Field Maple		*			
<i>Adoxa moschatellina</i>	Moschatel		*			
<i>Aethusa cynapium</i>	Fool's Parsley		*			
<i>Agrimonia eupatoria</i>	Agrimony		*			
<i>Alchemilla acutiloba</i>	Lady's-Mantle		*			
<i>Alchemilla vulgaris agg.</i>	Lady's-Mantle agg.		*			
<i>Allium ursinum</i>	Ramsons		*			
<i>Allium vineale</i>	Wild Onion		*			
<i>Anemone nemorosa</i>	Wood Anemone		*			
<i>Brassica nigra</i>	Black Mustard		*			
<i>Briza media</i>	Quaking-grass		*			
<i>Bromopsis ramosa</i>	Hairy-brome		*			
<i>Bryum argenteum</i>	Silver-moss	*				
<i>Buxus sempervirens</i>	Box	*				
<i>Carex divulsa</i>	Grey Sedge		*			
<i>Carex flacca</i>	Glaucous Sedge		*			
<i>Carex strigosa</i>	Thin-spiked Wood-sedge	*	*			*
<i>Carex sylvatica</i>	Wood-sedge		*			
<i>Ceterach officinarum</i>	Rustyback		*			
<i>Cornus sanguinea</i>	Dogwood		*			
<i>Dactylorhiza fuchsii</i>	Common Spotted-orchid	*				
<i>Dactylorhiza praetermissa</i>	Southern Marsh-orchid	*	*			
<i>Didymodon nicholsonii</i>	Nicholson's Beard-moss		*			
<i>Dipsacus fullonum</i>	Wild Teasel		*			
<i>Equisetum telmateia</i>	Great Horsetail		*			
<i>Euonymus europaeus</i>	Spindle		*			
<i>Galium mollugo</i>	Hedge Bedstraw		*			
<i>Galium odoratum</i>	Woodruff		*			
<i>Geranium columbinum</i>	Long-stalked Crane's-bill	*	*			
<i>Gliophorus psittacinus</i>	Parrot Wax-Cap	*				
<i>Hygrocybe chlorophana</i>	Golden Waxcap	*				
<i>Hygrocybe conica</i>	Blackening Wax-Cap	*				
<i>Hygrocybe flavipes</i>	Yellow Foot Waxcap	*				
<i>Hygrocybe pratensis var. pallida</i>	Pale Waxcap	*				
<i>Hygrocybe pratensis var. pratensis</i>	Meadow Wax-Cap	*				
<i>Hypericum hirsutum</i>	Hairy St John's-wort		*			*
<i>Hypericum pulchrum</i>	Slender St John's-wort		*			
<i>Iris foetidissima</i>	Stinking Iris		*			*
<i>Juncus inflexus</i>	Hard Rush		*			
<i>Kindbergia praelonga</i>	Common Feather-moss	*				
<i>Knautia arvensis</i>	Field Scabious		*			
<i>Lysimachia nemorum</i>	Yellow Pimpernel		*			
<i>Mentha aquatica</i>	Water Mint	*				
<i>Moehringia trinervia</i>	Three-nerved Sandwort		*			
<i>Myosotis discolor</i>	Changing Forget-me-not		*			
<i>Nymphaea alba</i>	White Water-lily	*	*			*

<i>Odontites vernus</i>	Red Bartsia		*			
<i>Oenanthe lachenalii</i>	Parsley Water-dropwort	*	*			*
<i>Ophioglossum vulgatum</i>	Adder's-tongue		*			
<i>Ophrys apifera</i>	Bee Orchid	*	*			*
<i>Orchis mascula</i>	Early-purple Orchid	*	*			
<i>Orthotrichum tenellum</i>	Slender Bristle-moss		*			
<i>Oxalis acetosella</i>	Wood-sorrel		*			
<i>Parietaria judaica</i>	Pellitory-of-the-wall		*			
<i>Paris quadrifolia</i>	Herb-paris	*	*			*
<i>Parmotrema perlatum</i>	Parmotrema perlatum	*				
<i>Phragmites australis</i>	Common Reed	*	*			
<i>Platanthera chlorantha</i>	Greater Butterfly-orchid	*	*			*
<i>Polypodium interjectum</i>	Intermediate Polypody		*			
<i>Polystichum aculeatum</i>	Hard Shield-fern		*			
<i>Polystichum setiferum</i>	Soft Shield-fern		*			
<i>Populus tremula</i>	Aspen		*			
<i>Poterium sanguisorba subsp. sanguisorba</i>	Salad Burnet		*			
<i>Primula veris</i>	Cowslip	*	*			
<i>Pulicaria dysenterica</i>	Common Fleabane		*			
<i>Ramalina fastigiata</i>	Ramalina fastigiata	*				
<i>Ranunculus auricomus</i>	Goldilocks Buttercup		*			*
<i>Ranunculus ficaria subsp. bulbifer</i>	Lesser Celandine		*			
<i>Ranunculus lingua</i>	Greater Spearwort		*			
<i>Reseda lutea</i>	Wild Mignonette	*	*			*
<i>Reseda luteola</i>	Weld		*			
<i>Rhinanthus minor</i>	Yellow-rattle	*	*			
<i>Rumex crispus x obtusifolius = R. x pratensis</i>	Dock	*	*			
<i>Sanicula europaea</i>	Sanicle		*			
<i>Sciuro-hypnum populeum</i>	Matted Feather-moss	*				
<i>Scrophularia auriculata</i>	Water Figwort		*			
<i>Silene flos-cuculi</i>	Ragged-Robin		*			
<i>Smyrniium olusatrum</i>	Alexanders		*			
<i>Sparganium emersum</i>	Unbranched Bur-reed	*	*			*
<i>Spergula arvensis</i>	Corn Spurrey	*				
<i>Stachys palustris</i>	Marsh Woundwort		*			
<i>Thamnobryum alopecurum</i>	Fox-tail Feather-moss	*				
<i>Tragopogon pratensis</i>	Goat's-beard		*			
<i>Tripleurospermum inodorum</i>	Scentless Mayweed		*			
<i>Ulmus procera</i>	English Elm		*			
<i>Umbilicus rupestris</i>	Navelwort		*			
<i>Valeriana dioica</i>	Marsh Valerian		*			
<i>Verbena officinalis</i>	Vervain	*	*			
<i>Veronica montana</i>	Wood Speedwell		*			
<i>Viburnum lantana</i>	Wayfaring-tree		*			*
<i>Viburnum opulus</i>	Guelder-rose		*			
<i>Vicia tetrasperma</i>	Smooth Tare	*	*			
<i>Viola odorata</i>	Sweet Violet		*			
<i>Viola reichenbachiana</i>	Early Dog-violet		*			

Status Key: LBAP = Local Biodiversity Action Plan species for the listed area. Locally Important = Locally Important within the listed area. Env. Act Wales (2016) = Environment (Wales) Act 2016 (Section 7). BoCC Amber (Wales) = RSPB Welsh Birds Amber List (not based on IUCN criteria). BoCC Red (Wales) = RSPB Welsh Birds Red List (not based on IUCN criteria).

APPENDIX C

Botanical Species List

Agrostis sp.	<i>Agrostis sp.</i>
Annual meadow grass	<i>Poa annua L</i>
Ash	<i>Fraxinus excelsior</i>
Birds-foot trefoil	<i>Lotus corniculatus</i>
Black medick	<i>Medicago lupulina</i>
Black thorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus</i>
Broad-leaved dock	<i>Rumex obtusifolius</i>
Broad-leaved Plantain	<i>Plantago major</i>
Carex sp.	<i>Carex sp.</i>
Cleaver	<i>Galium aparine</i>
Cocksfoot	<i>Dactylis glomerata</i>
Common mouse ear	<i>Cerastium fontanum</i>
Common sorrell	<i>Rumex acetosa</i>
Common vetch	<i>Vicia sativa</i>
Compact rush	<i>Juncus conglomeratus</i>
Creeping Bent	<i>Agrostis stolonifera</i>
Creeping buttercup	<i>Ranunculus repens</i>
Creeping cinquefoil	<i>Potentilla reptans</i>
Creeping thistle	<i>Cirsium arvense</i>
Crested Dog's Tail	<i>Cynosurus cristatus</i>
Cuckoo flower	<i>Cardamine pratensis</i>
Daisy	<i>Bellis perennis</i>
Dog rose	<i>Rosa canina</i>
Dogs' mercury	<i>Mercurialis perennis</i>
Elder	<i>Sambucus nigra</i>
False brome	<i>Brachypodium sylvaticum</i>
False oat-grass	<i>Arrhenatherum elatius</i>
Field maple	<i>Acer campestre</i>
Field woodrush	<i>Luzula campestris</i>
Fox sedge	<i>Carex vulpinoidea</i>
Glaucous sedge	<i>carex flacca</i>
Greater birds-foot trefoil	<i>Lotus pedunculatus</i>
Greater horsetail	<i>Equisetum telmateia</i>
Greater Knapweed	<i>Centaurea scabiosa</i>
Greater willowherb	<i>Epilobium hirsutum</i>
Grey willow	<i>Salix cinerea</i>
Ground ivy	<i>Glechoma hederacea</i>
Hairy sedge	<i>Carex hirta</i>
Hairy Tare	<i>Vicia hirsuta</i>
Hard rush	<i>Juncus inflexus</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>

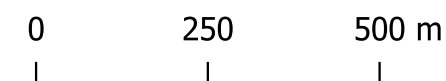
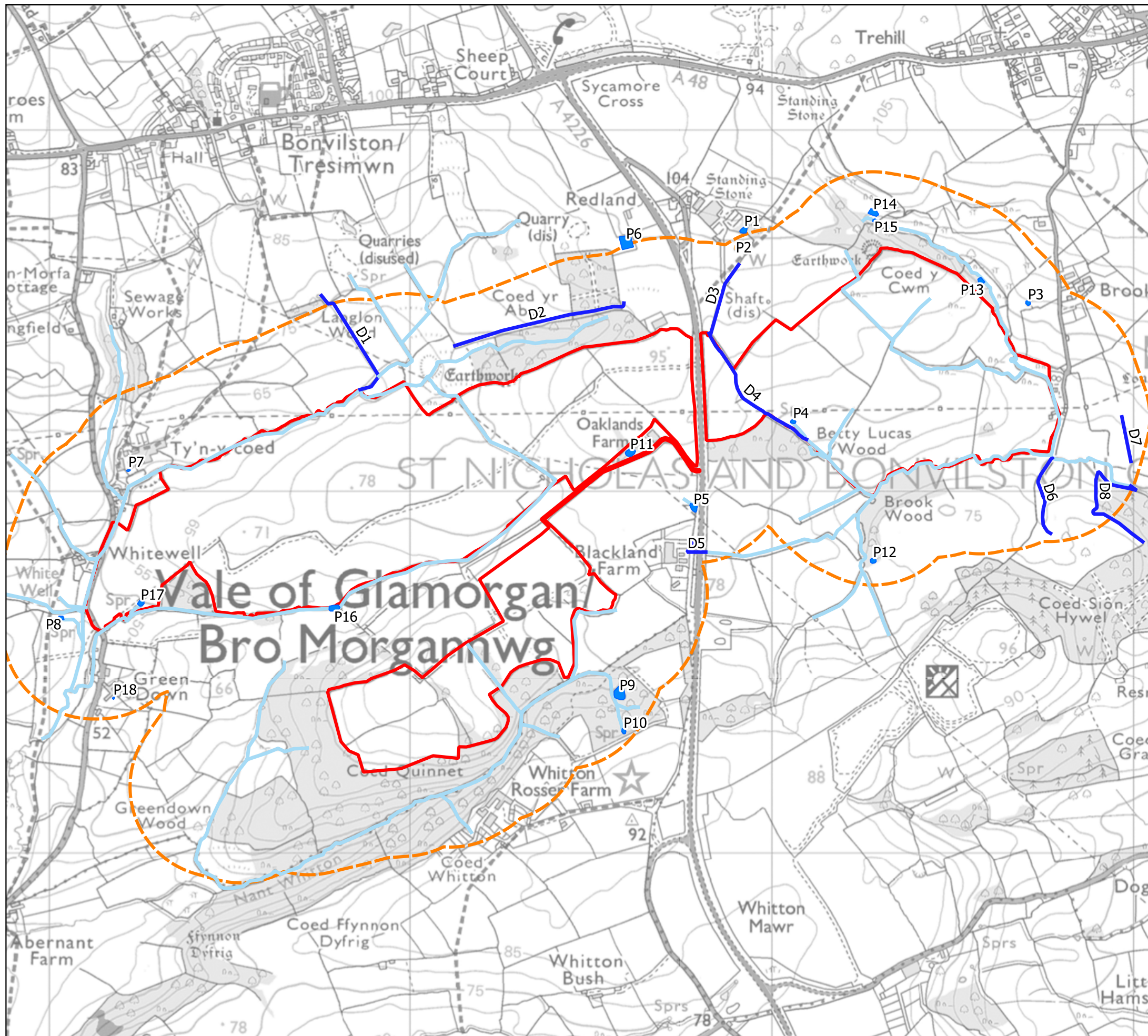
Hearts tongue fern	<i>Asplenium scolopendrium</i> ,
Hemlock water droplet	<i>Oenanthe crocata</i>
Herb Robert	<i>Geranium robertianum</i>
Hogweed	<i>Heracleum mantegazzianum</i>
Holly	<i>Ilex aquifolium</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Ivy	<i>Hedera helix</i>
Jointed rush	<i>Juncus articulatus</i>
Lesser spearwort	<i>Ranunculus flammula</i>
Lords and ladies	<i>Arum alpinum</i>
Marsh bedstraw	<i>Galium palustre</i>
Marsh foxtail	<i>Alopecurus geniculatus</i>
Marsh thistle	<i>Cirsium palustre</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadow foxtail	<i>Alopecurus pratensis</i>
Meadow sweet	<i>Filipendula ulmaria</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Mouse ear	<i>Cerastium fontanum</i>
Nettle	<i>Urtica dioica</i>
Oak	<i>Quercus robur</i>
Perennial ryegrass	<i>Lolium perenne</i>
Primrose	<i>Primula vulgaris</i>
Red clover	<i>Trifolium pratense</i>
Red fescue	<i>Festuca rubra</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Rough meadow grass	<i>Poa trivialis</i>
Sessile oak	<i>Quercus petraea</i>
Silverweed	<i>Argentina anserina</i>
Soft rush	<i>Juncus effusus</i>
Soft shield fern	<i>Polystichum setiferum</i>
Sorrell	<i>Rumex acetosa</i>
Spear thistle	<i>Cirsium vulgare</i>
Sticky mouse ear	<i>Cerastium glomeratum</i>
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
Taraxicum sp.	<i>Taraxacum officinale</i>
Tufted Hairgrass	<i>Deschampsia cespitosa</i>
Veronica sp.	<i>Veronica sp.</i>
Watercress	<i>Rorippa nasturtium-aquaticum</i>
White Clover	<i>Trifolium repens</i>
Wood avens	<i>Geum urbanum</i>
Yellow rattle	<i>Rhinanthus minor</i>
Yorkshire fog	<i>Holcus lanatus</i>

This drawing is the property of FPCR Environment and Design Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of FPCR Environment and Design Ltd.

Ordnance Survey material - Crown Copyright. All rights reserved.
Licence Number: 100019980

Key

- Site Boundary
- 250m buffer
- Waterbody
 - Defunct
 - Dry
 - No Access
 - Normal
 - Ditch
 - Running water



client
Sirius Renewable Energy

project
Oaklands Farm,
Bonvilston

drawing title
WATERBODY LOCATION PLAN

scale
1:11000

drawn
SLD / DJC

issue
5/3/2021

drawing / figure number
Figure 7

rev
9468-E-07B

Key

Site Boundary

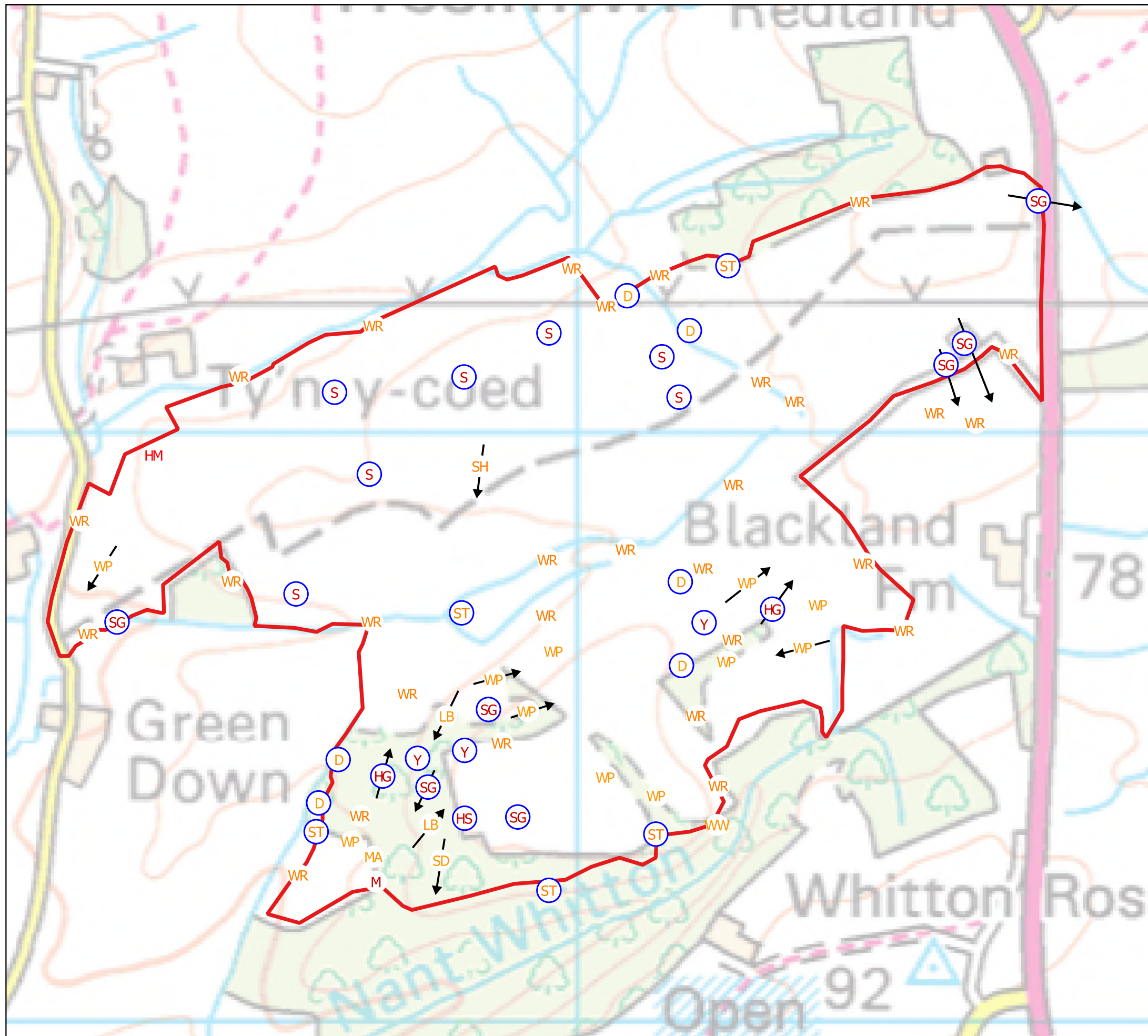
Fly over only

BoCC Red List Species

- HG** Herring Gull
- HS** House Sparrow
- M** Mistle Thrush
- S** Skylark
- SG** Starling
- Y** Yellowhammer
- HM** House Martin

BoCC Amber List Species

- D** Dunnock
- LB** Lesser Black-backed Gull
- MA** Mallard
- SD** Stock Dove
- WW** Willow Warbler
- ST** Song Thrush
- SH** Sparrowhawk
- WP** Woodpigeon
- WR** Wren



client
Sirius Group

project
Oaklands Farm and Pancross Farm,
Bonvilston

drawing title
SCOPING BIRD SURVEY RESULTS PLAN -
DISTRIBUTION OF NOTABLE SPECIES

scale @ a3
1:10,000

drawn
SCB / DJC

issue date
22/8/2022

drawing / figure number
Figure 8

rev
9468-E-08A

Key

 Site Boundary

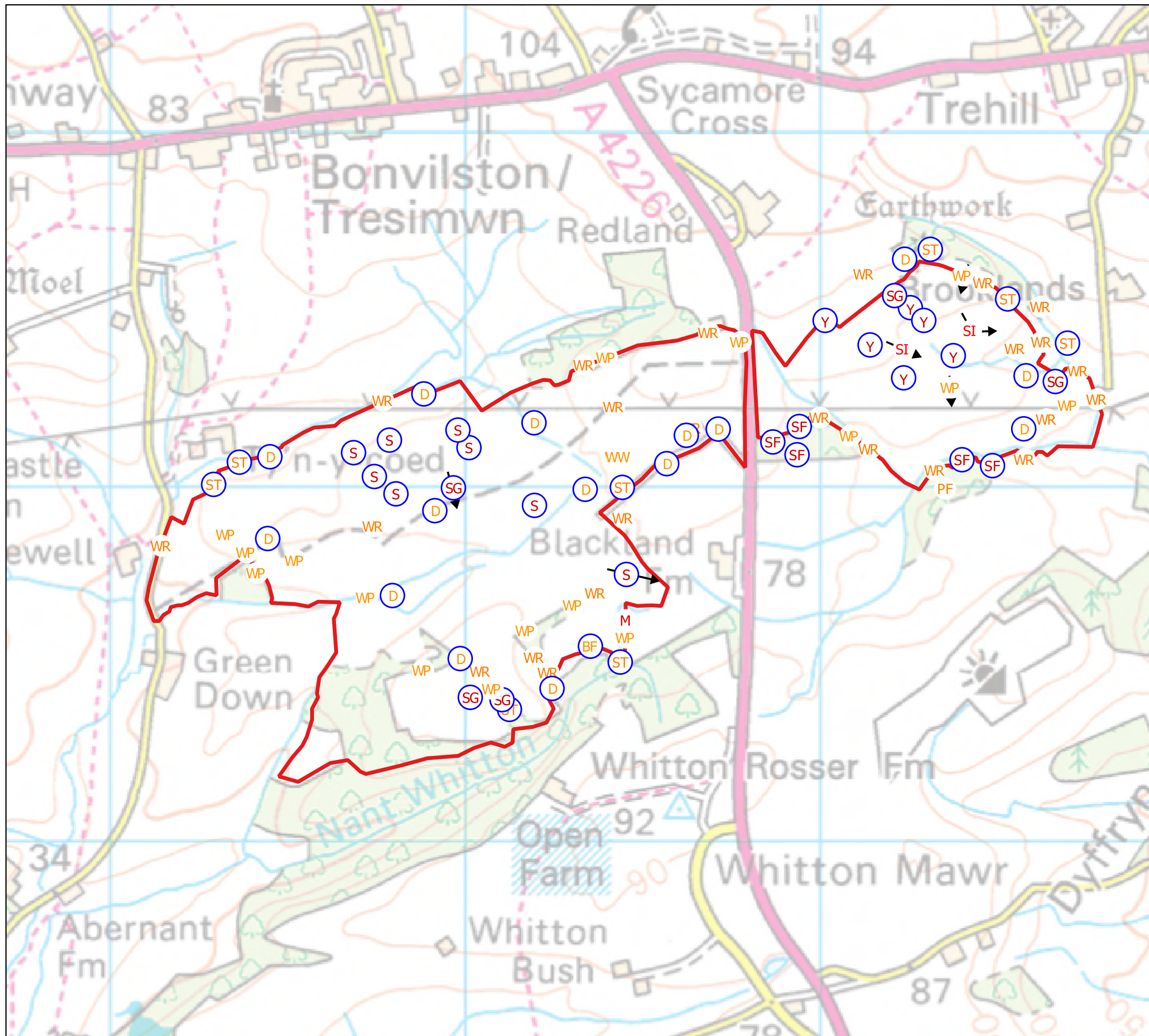
 Fly over only

BoCC Red List Species

- M** Mistle Thrush
- S** Skylark
- SF** Spotted Flycatcher
- SG** Starling
- Y** Yellowhammer
- SI** Swift

BoCC Amber List Species

- BF** Bullfinch
- D** Dunnock
- WW** Willow Warbler
- PF** Pied Flycatcher
- ST** Song Thrush
- WP** Woodpigeon
- WR** Wren



Key

 Site Boundary

 Fly over only

BoCC Red List Species

HS House Sparrow

S Skylark

SG Starling

SI Swift

BoCC Amber List Species

D Dunnock

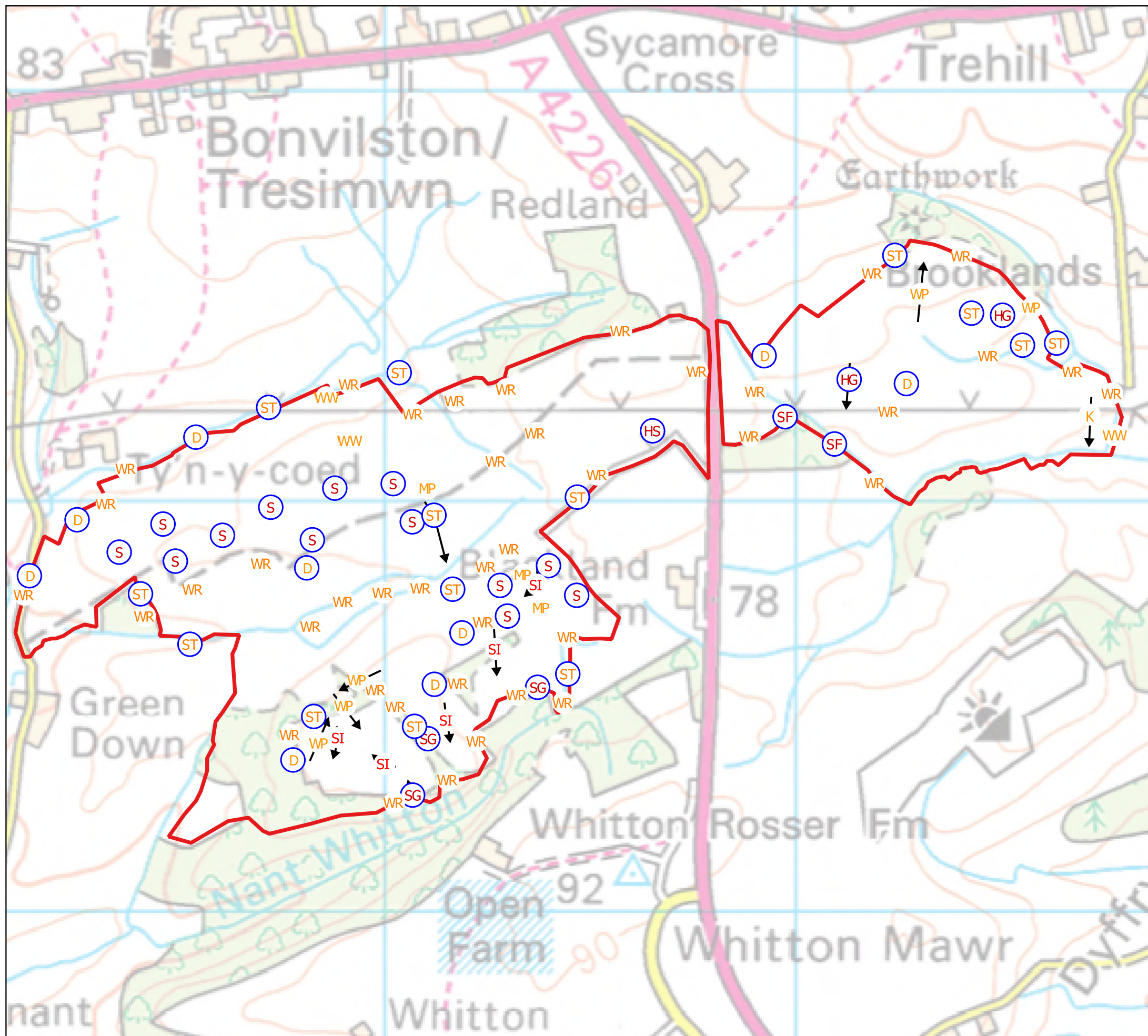
MP Meadow Pipit

WW Willow Warbler

ST Song Thrush

WP Woodpigeon







WR Wren

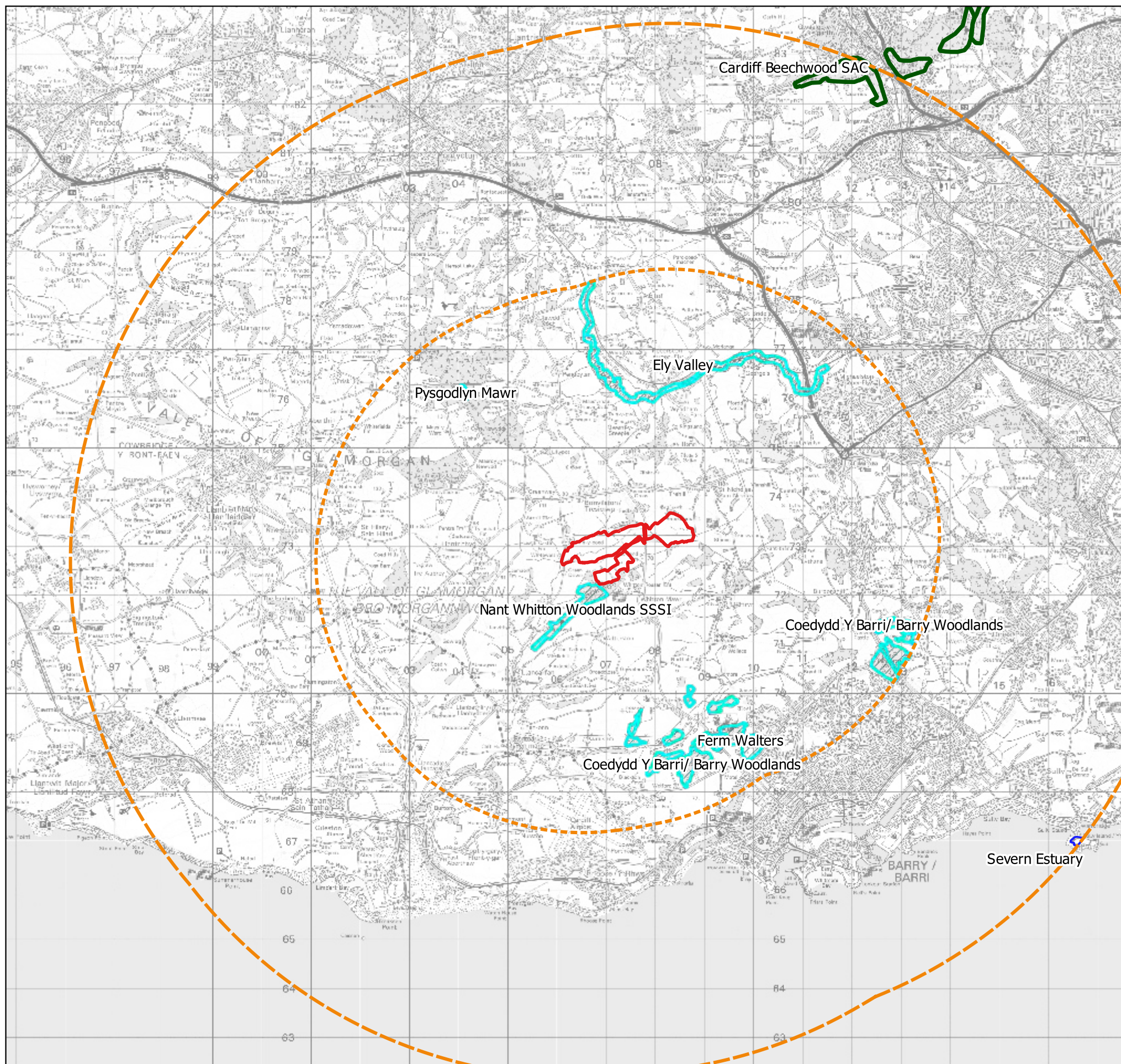


This drawing is the property of FPCR Environment and Design Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of FPCR Environment and Design Ltd.

Ordnance Survey material - Crown Copyright. All rights reserved.
Licence Number: 100019980

Key

-  Site Boundary
-  5km buffer
-  10km buffer
-  Sites of Special Scientific Interest (SSSI)
-  Special Area of Conservation (SAC)
-  RAMSAR Site



This drawing is the property of FPCR Environment and Design Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of FPCR Environment and Design Ltd.

Ordnance Survey material - Crown Copyright. All rights reserved.
Licence Number: 100019980

Key

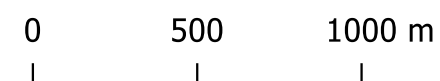
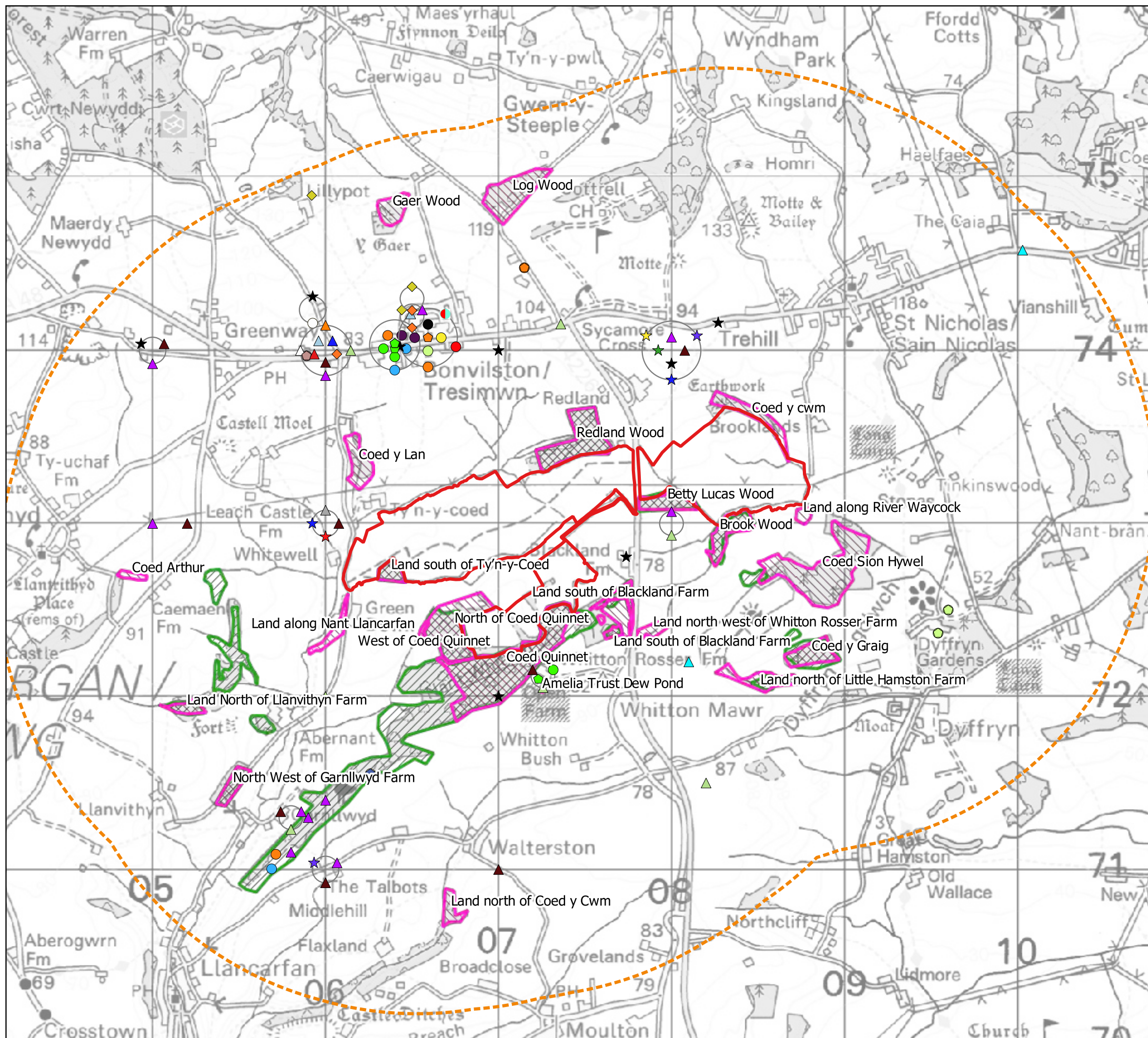
- Site Boundary
- 2km Buffer
- Sites of Importance for Nature Conservation (SINC)
- Ancient Semi-natural Woodland

Protected Species

- | | |
|--|--|
| ▲ Barn Owl | ● Myotis Bat Species |
| ▲ Fieldfare | ● Noctule Bat |
| ▲ Goshawk | ● Pipistrelle agg. |
| ▲ Hobby | Pipistrellus Bat Species |
| ▲ Kingfisher | ● Serotine |
| ▲ Merlin | ● Soprano Pipistrelle |
| ▲ Peregrine | ● Unknown Bat |
| ▲ Quail | ◆ Grass Snake |
| ▲ Red Kite | ◆ Great Crested Newt |
| ▲ Redwing | ★ Himalayan Balsam |
| ● Brown Long-eared Bat | ★ Japanese Knotweed |
| ● Common Pipistrelle | ★ Montbretia |
| ● Lesser Horseshoe Bat | ★ Three-cornered Garlic |
| ● Long-eared Bat Species | ★ Variegated Yellow Archangel |
| | ★ Wall Cotoneaster |

Bat Roosts

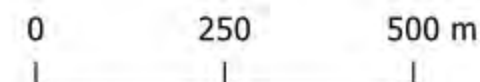
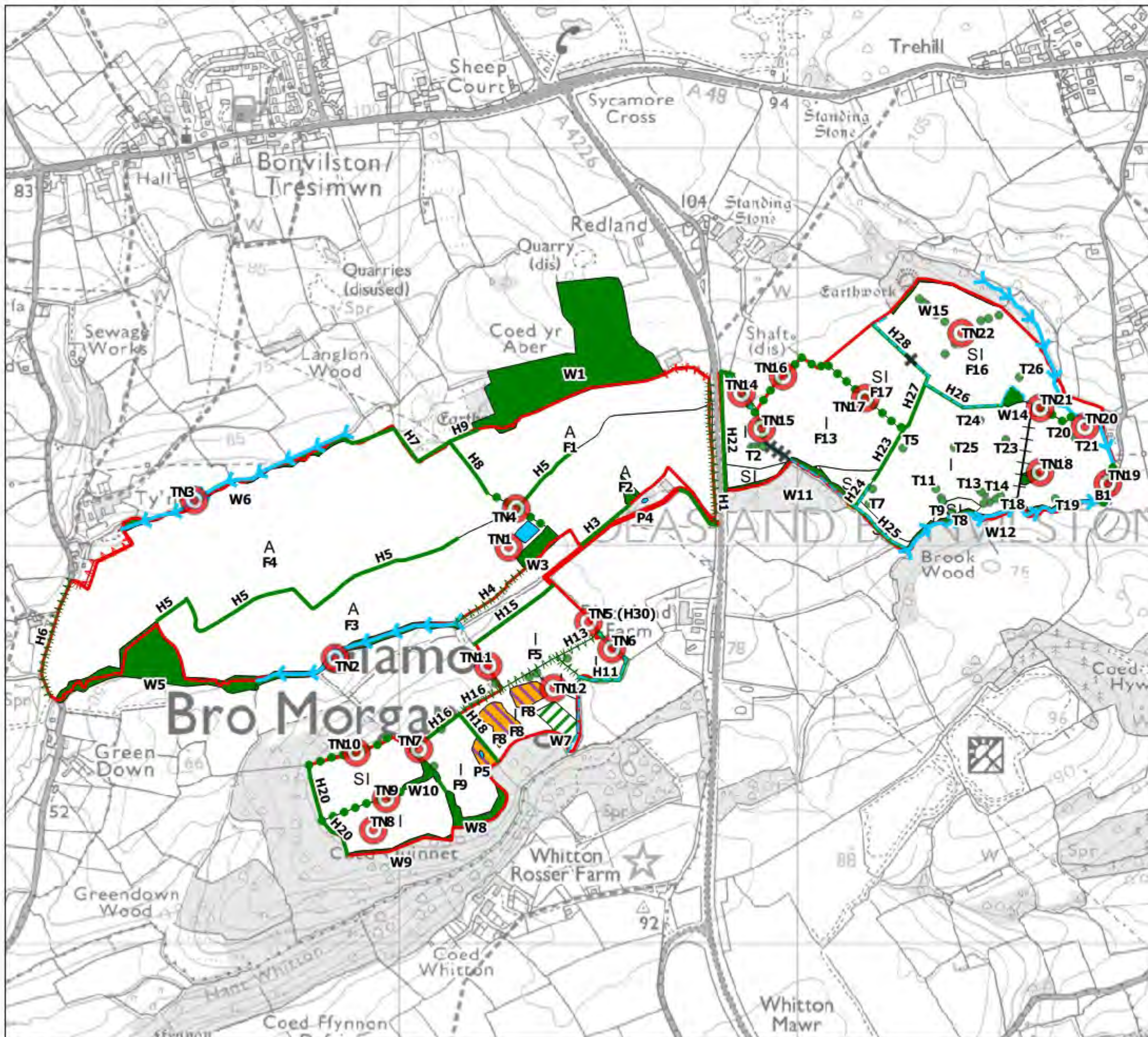
- | | |
|--|--|
| ◆ Common Pipistrelle | ◆ Pipistrellus Bat Species |
| ◆ Lesser Horseshoe Bat | ◆ Serotine |
| ◆ Long-eared Bat Species | ◆ Soprano Pipistrelle |
| ◆ Pipistrelle agg. | ◆ Unknown Bat |



client: Sirius Planning
 project: Oaklands Farm, Bonvilston
 drawing title: NON-STATUTORY SITES AND PROTCTED SPECIES PLAN
 scale: 1:23000
 drawing / figure number: **Figure 2**
 drawn: KO / DJC
 issue: 5/3/2021
 rev: **9468-E-02B**

Key

- Site Boundary
- Broadleaved woodland - plantation
- Broadleaved woodland - semi-natural
- A Cultivated/disturbed land - arable
- I Improved grassland
- Marsh/marshy grassland
- SI Poor semi-improved grassland
- Standing water
- Broadleaved trees
- Intact hedge - species-poor
- - - - Intact hedge - native species-rich
- - - - Hedges: Introduced shrub
- Fence
- Running water
- - - - Dry ditch
- Scrub - scattered
- Broadleaved tree

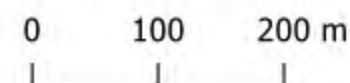
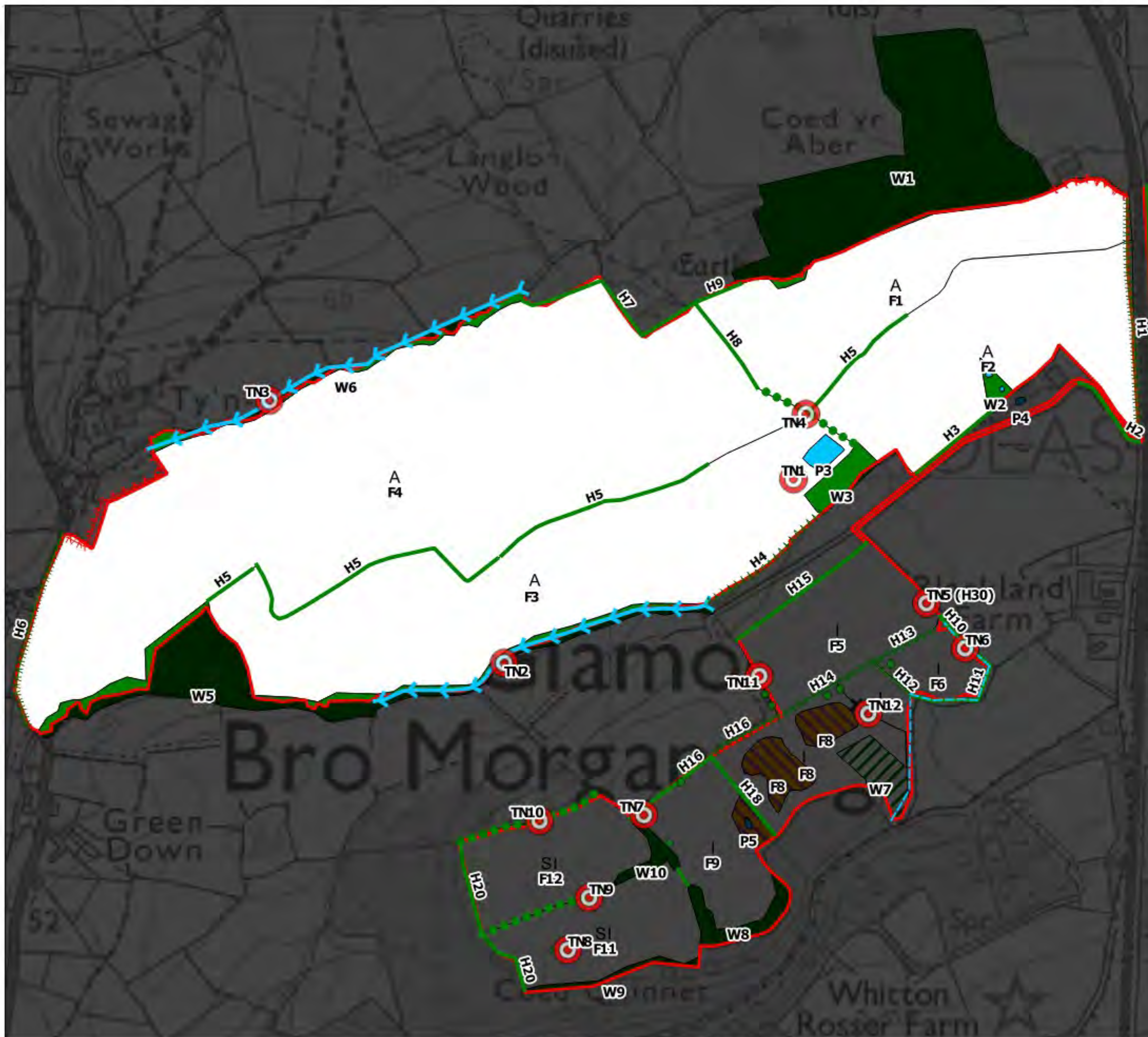


This drawing is the property of FPCR Environment and Design Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of FPCR Environment and Design Ltd.

Ordnance Survey material - Crown Copyright. All rights reserved.
Licence Number: 100019980

Key

- Site Boundary
- Broadleaved woodland - plantation
- Broadleaved woodland - semi-natural
- A Cultivated/disturbed land - arable
- I Improved grassland
- Marsh/marshy grassland
- SI Poor semi-improved grassland
- Standing water
- Broadleaved trees
- Intact hedge - species-poor
- - - - Intact hedge - native species-rich
- - - - Ornamental Hedge
- Fence
- Running water
- Scrub - scattered
- Broadleaved tree

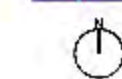
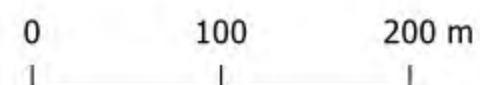
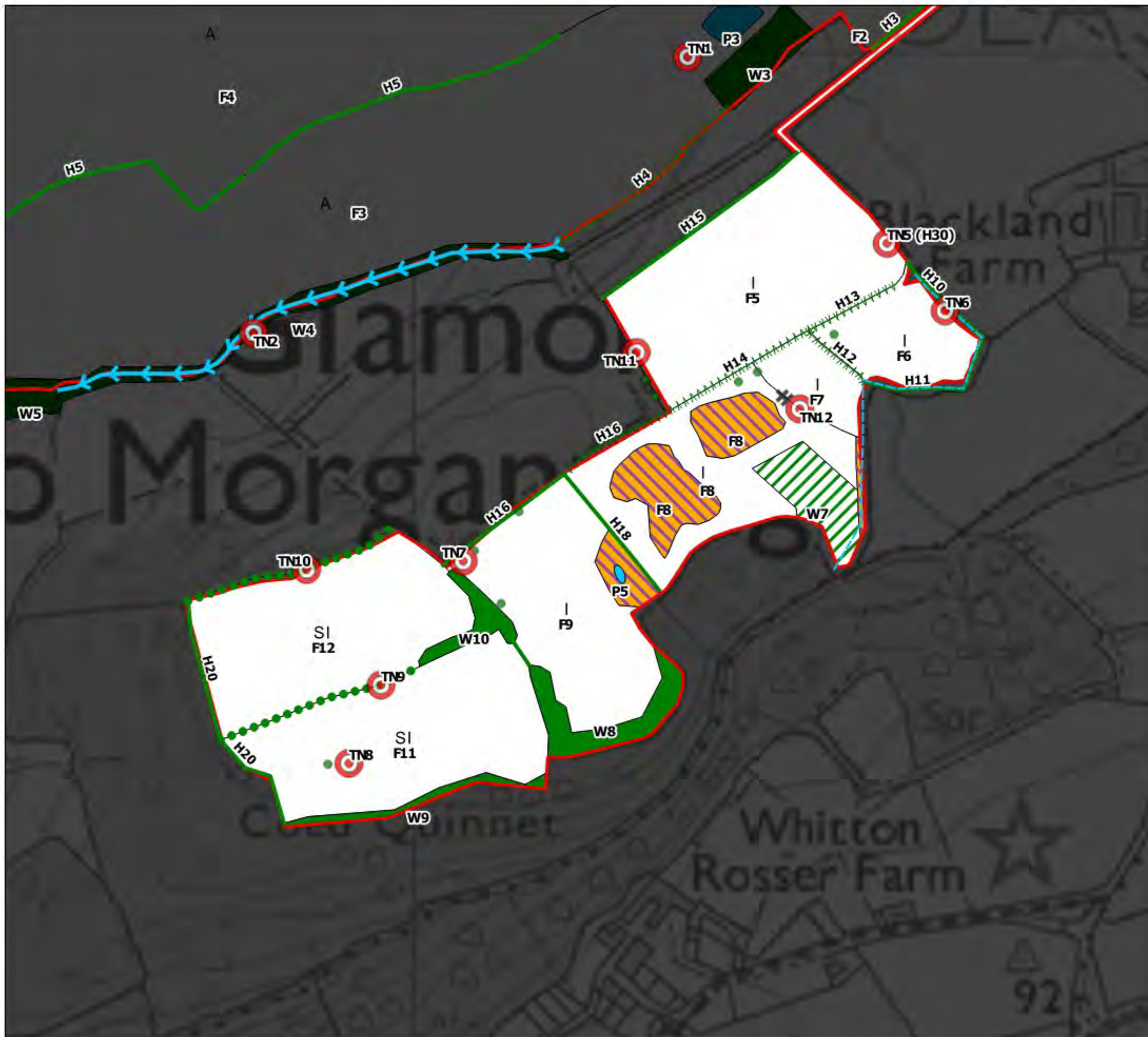


This drawing is the property of FPCR Environment and Design Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of FPCR Environment and Design Ltd.

Ordnance Survey material - Crown Copyright. All rights reserved.
Licence Number: 100019980

Key

- Site Boundary
- Broadleaved woodland - plantation
- Broadleaved woodland - semi-natural
- A Cultivated/disturbed land - arable
- I Improved grassland
- Marsh/marshy grassland
- SI Poor semi-improved grassland
- Standing water
- Broadleaved trees
- Intact hedge - species-poor
- - - - Intact hedge - native species-rich
- - - - Hedges: Introduced shrub
- Fence
- - - - Dry ditch
- Scrub - scattered
- Broadleaved tree



Key

- Site Boundary
- Broadleaved woodland - plantation
- Broadleaved woodland - semi-natural
- A Cultivated/disturbed land - arable
- I Improved grassland
- Marsh/marshy grassland
- SI Poor semi-improved grassland
- Standing water
- Broadleaved trees
- Intact hedge - species-poor
- - - - Intact hedge - native species-rich
- - - - Ornamental Hedge
- Fence
- Running water
- - - - Dry ditch
- Scrub - scattered
- Broadleaved tree

