

# MAESTAF STREET BRIDGE

## PRELIMINARY ECOLOGICAL APPRAISAL (PEA) REPORT

July 2022



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**CLIENT:** Merthyr Tydfil County Borough Council

**ISSUE DATE:** July 2022

**Maestaf Street Bridge**

**Preliminary Ecological Appraisal (PEA) Report**

|          | <b>NAME</b>    | <b>POSITION</b>    | <b>DATE</b>                |
|----------|----------------|--------------------|----------------------------|
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|     |            |                                      |                         |                           |
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|     |            |                                      |                         |                           |

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# Non-Technical Summary

|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Location</b>                          | Maestaf Street Bridge, Pentrebach, Merthyr Tydfil.<br>Central Grid Reference: SO 06378 03539.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Proposed Development</b>                   | General maintenance works and repairs to bridge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Purpose of survey/s</b>                    | To identify possible ecological constraints to the proposed works.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Dates of survey and names of surveyors</b> | Preliminary Ecological Appraisal – Megan Watts (Graduate Ecologist) and Anwen Moon (Assistant Ecologist) on 30 <sup>th</sup> May 2022.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Overview of Results</b>                    | <ul style="list-style-type: none"> <li>The Cwm Glo A Glyndyrys Site of Special Scientific Interest (SSSI) lies within 2 km of the scheme.</li> <li>A total of 14 non-statutory designated sites are located within 2 km of the scheme.</li> <li>There are no records of Tree Preservation Orders (TPO) in the immediate area of the site.</li> <li>A total of 14 Ancient Woodland (AW) sites lie within 1 km of the proposed works.</li> <li>Phase 1 habitats in the survey area included mixed scattered trees, dense scrub, introduced shrub, poor semi-improved grassland, amenity grassland, running water, bare ground, hard standing and buildings.</li> <li>No trees or buildings within the area had any potential bat roost features.</li> <li>Habitats on site were considered sub-optimal for commuting and foraging bats.</li> <li>The stream within the survey boundary was considered to have a limited potential for commuting and foraging otter.</li> <li>Habitats on site were considered sub-optimal for small mammals such as hedgehogs.</li> <li>The scattered trees and scrub habitats on site were considered suitable to support breeding birds.</li> <li>There was a low potential for common reptiles and amphibians to be present on site.</li> <li>The grassland verges have potential to be utilized by common/priority invertebrates.</li> <li>The stream within the survey boundary has potential to support some common fish species.</li> <li>Bluebells were recorded within the grassland areas on site.</li> <li>The Schedule 9 non-native invasive species Japanese knotweed was recorded in abundance on the southern riverbanks.</li> </ul> |
| <b>Recommendations</b>                        | <ul style="list-style-type: none"> <li>General bat mitigation is to be followed for the duration of the works.</li> <li>General otter mitigation is to be followed for the duration of the works.</li> <li>A method statement for reptiles, amphibians and small mammals will be required as a precautionary measure.</li> <li>Any vegetation clearance/tree removal (if required) must be undertaken outside the breeding bird season (i.e., works must be conducted between September and February inclusive) or under ecological supervision.</li> <li>Suitable pollution prevention measures must be employed to avoid pollution entering the stream.</li> <li>The appointed contractor will need to provide an appropriate Invasive Species Method Statement for proposed works to be followed for the duration of the works.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      | <ul style="list-style-type: none"> <li>All site personnel must receive a toolbox talk provided by an experienced ecologist prior to commencing work on site.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Opportunities for Enhancement</b> | <ul style="list-style-type: none"> <li> <b><i>Bat and Bird Boxes</i></b><br/>           Installation of a minimum of three bat boxes on suitable trees within the survey area, these should be positioned facing different aspects on the tree making sure two of the boxes face a south-west and south-easterly direction, and at a height of approx. 4-6 m above ground level. Installation of a minimum of three bird boxes for small passerines should be installed on suitable trees on site.         </li> <li> <b><i>Reptiles, Small Mammals and Invertebrates</i></b><br/>           Creation of brash(log)/deadwood, stone piles (where possible) e.g., from branches/stem cuttings.         </li> <li> <b><i>Additional Planting</i></b><br/>           Additional planting of the roadside verges and bare ground area with native tree/shrub species indicative of the area should be considered.         </li> </ul> |

# 1. Introduction

Redstart was commissioned by Merthyr Tydfil County Borough Council (MTCBC) to carry out a Preliminary Ecological Appraisal (PEA), including a desktop study and Phase 1 habitat survey of Maestaf Street Bridge in Merthyr (central grid reference: SO 06378 03539).

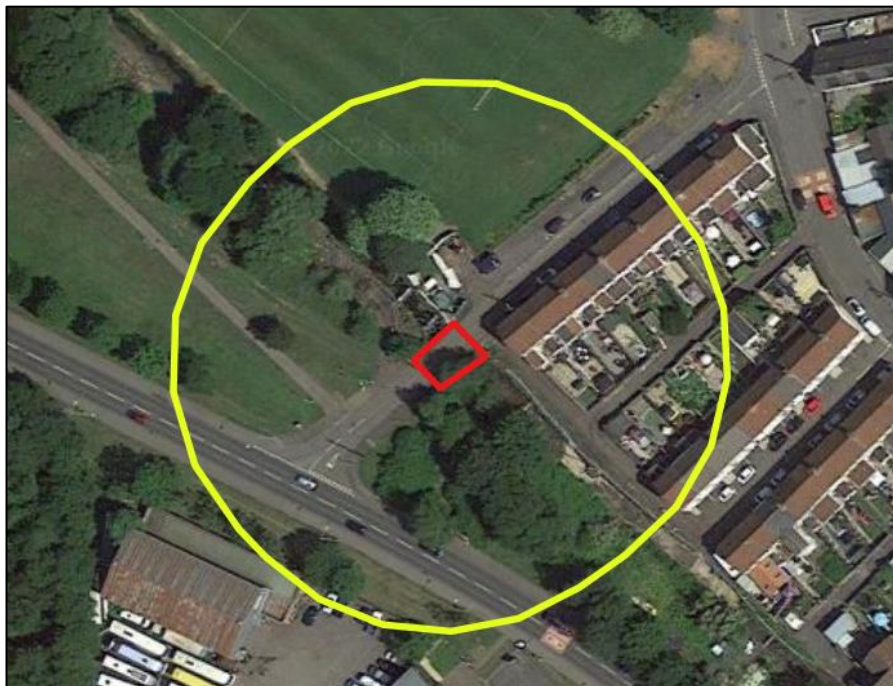
The survey was carried out to identify any ecological constraints associated with the proposed works and to determine whether further ecological assessment/surveys would be required.

This report presents the findings of the PEA and has been prepared to present any ecological constraints associated with the proposed scheme, along with outlining any mitigation measures and recommendations where appropriate.

## 1.1 Site Description

The proposed works will be taking place on a small bridge on Maestaf Street, which links Duffryn Road (east) and Merthyr Road (west). The bridge is located over a small tributary of the River Taff that flows north-west to south-west; the River Taff can be found approximately 200 m west of the tributary. The stream is bordered by scattered trees and dense scrub both north and south of the bridge, along with patches of semi-improved grassland roadside verges. A large portion of the area was recorded as hard standing, tarmac roads and domestic dwellings, there is also a large amenity grassland playing field that falls within the northern survey boundary.

**Figure 1:** Photograph of site adapted from Google Earth (2022). Location of the bridge highlighted in red, survey boundary highlighted in yellow.



## 1.2 Proposed works

Merthyr Tydfil County Borough Council are looking to improve Maestaf Street Bridge by carrying out general maintenance and repair work on the structure.

## 2. Methodology

### 2.1 Desk Study

A desk study was undertaken in June 2022 to identify any existing ecological information relating to the proposed development site and its surroundings.

A request to the South East Wales Biological Records Centre (SEWBRc) was made on the 23<sup>rd</sup> May 2022 for information on any ecologically designated sites, habitats and protected species or species of conservation concern within a 2 km (5 km for bats) radius of the proposed development (SEWBRc, 2022). This included a request for data for priority habitats and species listed under Section 7 of the Environment (Wales) Act 2016. The results of this search are summarised in Appendix B.

The Multi-Agency Geographic Information for the Countryside (MAGIC) website (MAGIC, 2022) was used to search for statutory designated sites of nature conservation value within 2 km of the site.

Natural Resources Wales' online designated site search was used to obtain citations for relevant statutory site designations identified (NRW, 2022), and details of non-designated sites (i.e., SINCs) within Merthyr were collated from the (MTCBC) Local Development Plan (LDP) with citations provided by the county ecologist.

MTCBC Tree Preservation Order (TPO) interactive map was also used for information about any TPOs within 500 m of the development site.

### 2.2 Field Survey

An Extended Phase 1 habitat survey was undertaken on the 30<sup>th</sup> May 2022 by Megan Watts (Graduate Ecologist) and Anwen Moon (Assistant Ecologist). This comprised a site 'walkover' to map Phase 1 habitats present within the proposed works area, following the standard survey methodology (JNCC, 2010). The relative abundance of each plant species was recorded using the Abundant, Common, Frequent, Occasional, Rare (ACFOR) scale. Dominant plant species were noted, as were any uncommon species or species indicative of particular habitat types, but there was no attempt to compile exhaustive species lists. Species nomenclature follows Stace (2010).

The habitats were assessed for their potential to support protected/notable species of plants and/or animals and observation was made of any incidental signs of protected/notable species.

### 2.3 Preliminary bat roost assessment (external inspection)

A preliminary assessment of structures and trees within the survey area was carried out during the PEA visit to the site.

Surveyors conducted an external Potential Roost Assessment (PRA) of all structures and trees (where accessible) within the survey boundary.

Surveyors looked for potential bat access and egress points, potential roosting sites and evidence of bat use during the PRA. Close focus binoculars and torches were used where appropriate.

A level of potential to support roosting bats was assigned to the structures and trees to determine any possible requirements for further survey. Potential to support roosting bats was assigned as either negligible, low, moderate or high in accordance with Bat Conservation Trust (BCT) Good Practice Guidelines (Collins, 2016).

The survey methods were based on the BCT Good Practice Guidelines (Collins, 2016).

## 2.4 Survey constraints

At the time of the survey, ecologists were unable to gain direct access to a large portion of the survey area occupied by numerous houses, therefore any houses with bat potential were surveyed with high power binoculars.

Any ecological survey can only identify what was present on site at the time it was conducted, and habitat use by species can change over time. The length of time survey data remains valid will depend on a case-by-case basis, but in general when the data within a report is between 18 months and 3 years old a top up site visit will be needed.

## 3. Results

The results of the desk study and field survey are described as follows.

### 3.1 Designated Sites

#### 3.1.1 Statutory Designated Sites

One statutory designated site (i.e., Site of Special Scientific Interest (SSSI)) is located within 2 km of the scheme (central grid reference: SO 06378 03539), this is described below in Table 1.

**Table 1:** Statutory Designated Sites within 2 km of the site.

| Site Name                 | Designation | Designatory features                                                                                                                                                                                                                                                                                                                                                                                                   | Distance & direction from Scheme |
|---------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Cwm Glo<br>A<br>Glyndyrys | SSSI        | This site is of special interest for its extensive areas of marshy grassland, species-rich neutral grassland and acid grassland. It is also of special interest for its diverse assemblage of grassland fungi, making it one of the best sites in Britain. The area has a number of different habitats that add interest to the site, including extensive areas of woodland which have known to be present since 1800. | Approx. 1680 m north-west        |

#### 3.1.2 Non-Statutory Designated Sites

A total of 14 non-statutory designated sites (i.e., Sites of Importance for Nature Conservation (SINCs)) are found within 2 km of the proposed scheme. The most relevant of these located within 500 m of the works are listed in Table 2. The location of all the sites is shown in Drawing (GC4195-RED-74-XX-M2-L-3001), which also includes statutory sites.

**Table 2:** The most relevant SINCs located within 500 m of the scheme.

| Site Name         | Designation | Designatory features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Distance & direction from Scheme |
|-------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| The River<br>Taff | SINC        | <p>The River Taff is a major river in the county borough, areas of particular interest include bankside and floodplain habitats along with the associated ancient woodland habitats.</p> <p>Otter (<i>Lutra lutra</i>) occur throughout the length of the SINC, the river is also known to be of value to a wide variety of birds including kingfisher (<i>Alcedo atthis</i>) and dipper (<i>Cinclus cinclus</i>). Salmon (<i>Salmo salar</i>), brown trout (<i>Salmo trutta</i>) and a range of foraging bat species also utilize the river.</p> | Approx. 200 m west               |

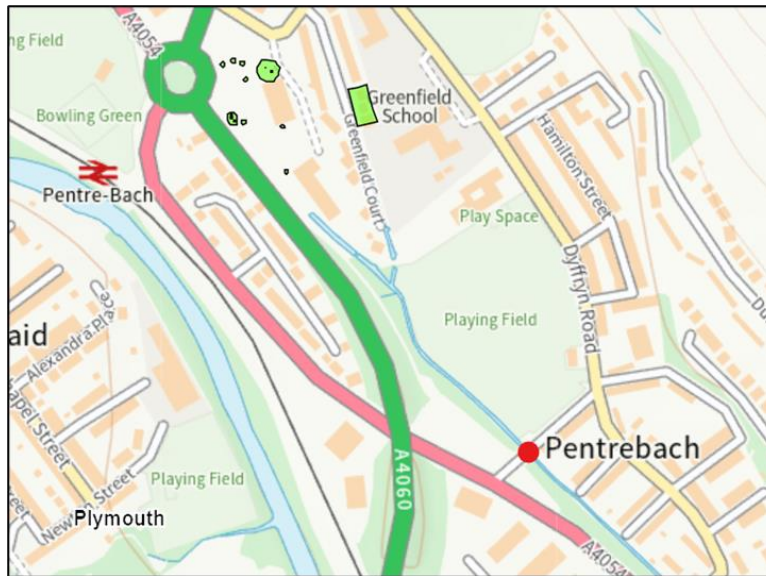
| Site Name         | Designation | Designatory features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Distance & direction from Scheme |
|-------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Pentrebach Fields | SINC        | <p>This SINC comprises a series of species-rich semi-improved neutral grassland fields alongside a disused railway embankment. It also contains scattered and dense scrub, bracken slopes and large mature oak (<i>Quercus</i> sp.) trees.</p> <p>Species of interest include viper's-bugloss (<i>Echium vulgare</i>), small cudweed (<i>Logfia minima</i>) and musk thistle (<i>Carduus nutans</i>).</p>                                                                                                                                               | Approx. 300 m east               |
| Pentrebach Tip    | SINC        | <p>This SINC is a large colliery spoil tip that has revegetated with mainly dry heathland along with areas of valley-side 'ffridd', comprising mainly acid grasslands, bracken slopes, marshy grassland, gorse scrub and semi-natural broadleaved woodland. The rare Dartford warbler (<i>Sylvia undata</i>) has been recorded on the site, along with brown hare (<i>Lepus europaeus</i>) and the scarce olive earthtongue fungus (<i>Microglossum olivaceum</i>).</p>                                                                                 | Approx. 410 m east               |
| Troed-y-rhiw      | SINC        | <p>This SINC comprises a large area of valley-side 'fridd', comprising mainly dry heathlands dominated by ling heather and bracken slopes with scattered trees, with acid grasslands to the north. Two large old quarries are situated south of the site, along with a small, wooded pond with several drainage ditches.</p> <p>Plant species of interest include the regionally scarce stag's-horn clubmoss (<i>Lycopodium clavatum</i>) and viper's-bugloss. The heathlands are likely to support a range of characteristic invertebrate species.</p> | Approx. 450 m north-east         |

### 3.1.3 Tree Preservation Orders (TPO) and Ancient Woodland (AW)

A total of 10 Tree Preservation Orders are located within 500 m of the proposed works, the closest being located approximately 340 m north-west of the scheme.



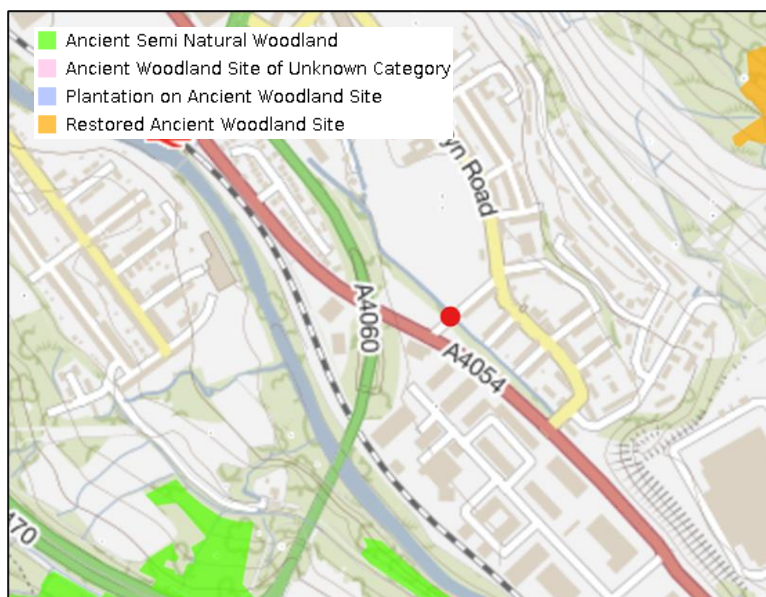
**Figure 1:** Closest TPO trees (highlighted in green) to Maestaf Street Bridge (highlighted in red). Adapted from MCBC interactive map (MCBC, 2022).



Due to the localised nature of the works and the distance of these TPO's from the scheme, it is unlikely they will be impacted by the proposed works on Maestaf Street bridge; therefore they will not be discussed further in this report.

A total of 14 ancient woodland sites lie within 1 km of the scheme, comprising ten ancient semi-natural woodland sites, three restored ancient woodland sites and one plantation on ancient woodland sites. Two ancient woodland sites and one restored ancient woodland site are located within 500 m of the scheme (see Figure 2).

**Figure 2:** Ancient Woodland Inventory adapted from NRW (2022). Central grid reference (SO 06378 03539) highlighted in red.



Due to the localised nature of the works and distance of the ancient woodland areas from the bridge, they will not be impacted by the scheme and thus will not be discussed further in this report.



## 3.2 Habitats

### 3.2.1 Phase 1 Habitat Survey

The following Phase 1 habitats were identified in the survey area, listed in the order found in the Phase 1 handbook (JNCC, 2010):

- Mixed scattered trees,
- Dense scrub,
- Introduced shrub,
- Poor semi-improved grassland,
- Amenity grassland,
- Running water,
- Bare ground,
- Hard standing,
- Buildings.

The Phase 1 habitats are described below. Habitat distribution and corresponding habitat codes are provided on Phase 1 Habitat Map, Drawing (GC4195-RED-74-XX-M2-L-3002). A botanical species list is provided in Appendix C.

#### *Mixed Scattered Trees (Broadleaved)*

A large portion of the survey area is covered by singular or groups of scattered mature trees. Scattered trees were found bordering the stream for its entire length within the survey boundary north-west and south-west of the bridge. Scattered planted trees were also found bordering the playing field and along the roadside verges on Merthyr Road.

Tree species included occasional sycamore (*Acer pseudoplatanus*), willow species (*Salix* sp.), field maple (*Acer campestre*), hazel (*Corylus avellana*), beech (*Fagus sylvatica*) and hawthorn (*Crataegus monogyna*).

**Photograph 1:** Scattered mature trees bordering the stream and bridge, taken from the south-west corner of the bridge.



### *Dense Scrub*

Areas of dense scrub were found bordering the stream both north and south of the bridge. Dense scrub was found growing on the riverbanks transitioning into larger areas of grassland between areas of scrub and the site boundary. The dense scrub in the area was often found in close proximity to the scattered trees.

Species included abundant bramble (*Rubus fruticosus* agg.) occasionally occurring hawthorn (*Crataegus monogyna*) and willow species (*Salix* sp.) along with frequently occurring common nettle (*Urtica dioica*) and rarely occurring crack willow (*Salix fragilis*).

**Photograph 2:** Dense scrub located on the western riverbank north of the bridge.



### *Introduced Shrub*

A small parcel of introduced shrub was present within the southern area of the survey boundary, see Drawing (GC4195-RED-74-XX-M2-L-3002) for exact habitat locations. Here the vegetation was dominated by the planted, non-native shrubs coral berry (*Ardisia crenata*) and hedge bindweed (*Calystegia sepium*).

### *Poor Semi-Improved Grassland*

Grassland verges bordering Merthyr Road and Maestaf Street were recorded as poor semi-improved grassland habitats. There was a moderate level of human disturbance within these areas, however, most species were left to grow without regular mowing. Surveyors also noted a sign to inform the public that the area is being left to grow for the benefit of pollinators.

Species included commonly occurring Yorkshire-fog (*Holcus lanatus*), white clover (*Trifolium repens*) and common bent (*Agrostis capillaris*), frequently occurring creeping buttercup (*Ranunculus repens*), dandelion (*Taraxacum officinale* agg.) and daisy (*Bellis perennis*), along with occasionally occurring oxeye daisy (*Leucanthemum vulgare*).



**Photograph 3:** Poor semi-improved grassland on the western border of the stream.



### *Amenity Grassland*

A large playing field was found within the northern quarter of the survey area directly north of the bridge. Vegetation in this area was intensively managed and appeared to be mown regularly.

Species in this area included abundant perennial ryegrass (*Lolium perenne*) and occasional dandelion, daisy and creeping buttercup.

**Photograph 4:** Large sports field comprising amenity grassland habitat found north of the bridge.





### *Running Water*

Maestaf Street Bridge is located over a small stream/tributary of the River Taff (which can be found approximately 200 m west), flowing through the survey area north-west to south-east. North-west of the bridge, the stream is approximately 2 m wide with densely vegetated banks (see Photograph 5). The stream then emerges into a reinforced concrete channel approximately 1.5 m wide south of the bridge (see Photograph 6). The channel was found to continue beyond the survey boundary. The stream was shallow and slow flowing at the time of the survey, following a period of dry weather.

**Photograph 5:** Densely vegetated stream northern side of the bridge.



**Photograph 6:** Emerging concrete culvert southern side of the bridge.





### *Bare Ground*

A patch of bare ground falls within the survey boundary west of the river, downstream from the bridge. This area of bare ground was created when vegetation was cleared to allow access for the new river channel to be constructed. The area was directly adjacent to the culvert and comprised loose soil with gravel with numerous stone/rock piles. The Schedule 9 invasive non-native species Japanese knotweed (*Fallopia japonica*) was recorded in abundance within this area.

**Photograph 7:** Bare ground with two stone piles bordering the western riverbank south of the bridge.



### *Hard standing*

Hard standing covered a large proportion of the survey area in the form of tarmac and concrete. This included Merthyr Road, Maestaf Street and Dyffryn Road, along with the surrounding pavements.

### *Buildings*

Domestic dwellings with gardens also covered a large proportion of the survey area, the location of these buildings can be seen in Drawing (GC4195-RED-74-XX-M2-L-3002).

## 3.3 Species

Results combining data searches and observations during the PEA survey are presented below. Appendix B lists protected/priority species and species of conservation concern identified within a 2 km radius of Maestaf Street Bridge (5 km for bats) within the last 10 years from data provided by SEWBRc.

### 3.3.1 European Protected Species

#### Bats

There were 91 records of bats within 5 km of Maestaf Street Bridge (SEWBRc 2022). A total of seven different species were recorded, with one category distinguished for bats not identified to species level.

The closest record was for a soprano pipistrelle (*Pipistrellus pygmaeus*) found approximately 160 m north-west. The closest bat roost record was for a common pipistrelle (*Pipistrellus pipistrellus*) found approximately 1400 m north-west of the scheme.

The wider area of the site with roads surrounded by domestic dwellings and fragmented areas of scattered trees were considered sub-optimal for commuting and foraging bats.

No trees or buildings within the survey area had any significant bat roosting features. Full access to the buildings within the survey boundary to assess for features that may be suitable for bats was not possible, however no features of interest were observed through binoculars on houses that were visible from the roadside.

The bridge was assessed as having negligible potential to support roosting bats, it's main structure mainly comprised concrete blocks with no visible potential roost features such as small gaps (See Photograph 8). The bridge deck was also very close to the stream and any potential roost features beneath the bridge (not visible to surveyors) would potentially be exposed to flooding during periods of highwater levels, reducing the likelihood for bats to be roosting beneath the bridge.

**Photograph 8:** Maestaf Street Bridge, photographed from the northern side.



### *Otter*

No records for European otter (*Lutra lutra*) were returned within 2 km of the site within the last 10 years.

No evidence of otter was recorded during the survey, the emerging culvert south of the bridge and riverbanks north of the bridge were both assessed as having negligible potential to support otter holts, however the stream did have a limited potential to support commuting otter.

### *Hazel Dormouse*

No records of hazel dormouse (*Muscardinus avellanarius*) were returned by SEWBRc from the desktop study within 2 km of the site.

The areas of dense scrub within the survey boundary offered negligible potential to support dormouse due to their exposed and fragmented nature, these areas also lacked connectivity to more suitable wider habitat due to the roads and domestic dwellings. Food sources such as hazel and bramble were present, however not at densities that would provide an abundance of successional food sources. Due to the localised nature of the proposed works and quality of the habitat within the survey boundary, it is unlikely that dormice are utilising the area, therefore they will not be discussed further in this report.

### *Great Crested Newt (GCN)*

One record for great crested newt (*Triturus cristatus*) was returned from the 2 km data searches, this was located approximately 1700 m north-east of the scheme.

During the survey, no suitable waterbodies or aquatic breeding habitats for great crested newt were identified. Aerial and data searches showed that there are no ponds/areas of standing water within 500 m of the scheme. Taking these factors into consideration along with the terrestrial habitat surrounding the works being subject to a high level of disturbance from buildings/roads, it is unlikely that great crested newts are utilising the area, therefore they will not be discussed further in this report.

## 3.3.2 *UK Protected/Priority Species*

### *Badger*

Three records for Eurasian badger (*Meles meles*) were returned from the 2 km data searches within the last 10 years, the closest of which was found approximately 1100 m west on the A470 as a road casualty.

During the survey, the grassland and scattered trees were assessed as having negligible potential to support foraging and commuting badger due to the areas being small, fragmented, enclosed by roads and residential buildings with high public disruption, offering little connectivity to suitable wider habitats.

The scrub and scattered trees within the survey area were recorded as having negligible potential for badgers to establish setts due to high public disturbance and poor-quality habitat. As such badger will not be discussed further in this report.



### *Small mammals (excluding bats, otter, hazel dormouse and badger)*

A total of 12 records for other protected and priority mammals were returned from SEWBRc data searches, including ten records for West European hedgehog (*Erinaceus europaeus*), one record for weasel (*Mustela nivalis*) and one record for polecat (*Mustela putorius*). The closest record was for West European hedgehog, found approximately 170 m west of the scheme.

Habitats such as the grassland and scrub within the survey area were recorded as suitable to support commuting, foraging and sheltering small mammals such as hedgehogs.

### *Birds*

A total of 85 records for 25 species of protected and priority birds were returned from SEWBRc data searches, including seven Schedule 1 species (WCA, 1981) and 18 Section 7 (S7) species (Environment (Wales) Act, 2016). The closest Schedule 1 record was for red kite (*Milvus milvus*) found approximately 130 m south of the scheme. The closest S7 record was for kestrel (*Falco tinnunculus*) found in the same area as the red kite.

Eight bird species were recorded during the site survey, including blackbird (*Turdus merula*), wren (*Troglodytes troglodytes*), robin (*Erithacus rubecula*), great tit (*Parus major*), goldfinch (*Carduelis carduelis*), jackdaw (*Corvus monedula*), blue tit (*Cyanistes caeruleus*) and magpie (*Pica pica*).

The scattered trees and dense scrub on site offered potential to support breeding, commuting and foraging birds.

### *Reptiles*

Six records for priority and protected reptiles were returned via the 2 km data searches, including two records for common lizard (*Zootoca vivipara*), one record for grass snake (*Natrix helvetica helvetica*) and three records for slow-worm (*Anguis fragilis*). The closest record for common lizard, located approximately 500 m south-east of the scheme.

The scrub habitats adjacent to hardstanding areas on site may offer potential to support foraging, commuting and sheltering reptiles. There were two large piles of stones/blocks present within the area of bare ground west of the stream that could offer suitable resting places for reptiles (See Target Note 5 and Photograph 9).

**Photograph 9:** Large stone piles within the bare ground area adjacent to the culvert (approximate grid reference: SO 06392 03515).



### *Amphibians (excluding great crested newt)*

Four records for other protected and priority amphibians were returned from the 2 km data searches, including two records for common frog (*Rana temporaria*) and two records for common toad (*Bufo bufo*). The closest record was for common frog, located approximately 420 m west.

No suitable breeding ponds for amphibians were recorded during the survey, two stone piles were recorded within the south-western survey area which could offer suitable basking/resting areas for common amphibians (See Photograph 9).

### *Invertebrates*

A total of 10 records for nine species of protected and priority invertebrates were returned from the data searches, the closest record was for rosy rustic (*Hydraecia micacea*) which was found approximately 440 m west of the scheme.

Habitats within the survey area such as the overgrown grassland verges and dense scrub were suitable to support a variety of common and potentially, priority invertebrate species.

### *Fish*

No records for protected and priority fish species were returned within 2 km of the scheme in the last 10 years.

No evidence of fish was recorded during the survey; however, it is likely that this stream that leads to the River Taff will support some fish species.

### *Protected Plant Species*

One record for priority and protected plant species was returned from the data searches, this was for stag's-horn clubmoss (*Lycopodium clavatum*) which was recorded approximately 770 m east of the scheme.

Bluebells (*Hyacinthoides non-scripta*) were recorded within the grassland areas on site.

### *Invasive Plant Species*

A total of 27 records for three species of invasive plants were returned via the 2 km data searches, including two Schedule 9 species. The closest invasive species record was for Japanese knotweed (*Fallopia japonica*) found approximately 380 m south-west of the scheme.

The Schedule 9 invasive non-native plant species Japanese knotweed (*Fallopia japonica*) was recorded in abundance within the patch of bare ground south of the bridge, bordering the riverbanks, occupying a large proportion of the south-western survey area. One stand of yellow flag iris (*Iris pseudacorus*) was also recorded on the western riverbank.

## 4. Evaluation of Ecological Features and Potential Impacts

The desk study revealed a range of designations within the 2 km search boundary, including one SSSI and several SINC. Due to the fragmented nature of the habitats on site and localised nature of the proposed works, the impacts from this proposed development are likely to be low. Detailed evaluations of ecological impacts are as follows:

### 4.1 Statutory and Non-Statutory Designated Sites

The Cwm Glo A Glyndyrys Site of Special Scientific Interest (SSSI), designated for its grassland fungi and woodland, is located approximately 1680 m north-west of the proposed works. Due to the distance of the localised proposed works on Maestaf Street Bridge from the SSSI, it was considered that works undertaken at Maestaf Bridge will not impact the statutory designated site.

A total of 14 non-statutory sites were found within 2 km of the proposed scheme, the closest being the River Taff SINC located approximately 200 m west. Of these sites, the River Taff SINC is the only site that has potential to be impacted by the proposed works on Maestaf Street Bridge, likely from pollution of the stream. The River Taff SINC will require protection during any works to avoid pollution.

### 4.2 Bats

The watercourse north and south of Maestaf Street Bridge and surrounding areas offered a limited potential to support foraging and commuting bats. Habitats surrounding the bridge are mostly illuminated by street lighting, although pipistrelle bats will forage in such areas, other species are less likely to be found due to the level of ambient light.

If the works are carried out during the active bat season (April to September inclusive), there is a potential for foraging and commuting bats to be temporarily disturbed by any works through noise, vibration and lighting.

Bats are protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, and it is an offence to deliberately disturb and damage or destroy a breeding or resting site of any European protected species.

### 4.3 Otter

The stream offered a limited potential to support commuting and foraging otter, as it is a tributary of the River Taff, which is cited as supporting an otter population.

The emerging culvert south of the bridge was assessed as having negligible potential to support otter holts due to the concrete structure, however it did offer a limited potential for commuting otter. The riverbanks north of the bridge were also considered unsuitable to support otter holts/resting sites, this was because although the banks were densely vegetated, the coverage was not sufficient to protect from disturbance. The banks also experience a high level of disruption from the adjacent playing field and road with numerous dog walkers also observed during the survey. This level of disturbance is likely to deter any potential holt creation within the area. No impacts to otter holts/resting sites are therefore anticipated.

Foraging and commuting behaviour may be adversely affected in the short term through noise, vibration and or lighting disturbance during construction works. Impacts are likely to be negligible-low adverse following the implementation of the recommendations in Section 6.1.2.

Otters are protected through a range of legislation including the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and it is an offence to deliberately disturb and damage or destroy a breeding or resting site of any European protected species.

#### 4.4 Small Mammals

Although the site is isolated and lacks connectivity to more suitable wider areas, small mammals such as hedgehogs can travel up to 2 km in urban areas, therefore a precautionary approach to the presence of small mammals is recommended. Due to the scale and localised nature of the proposed works, it is not anticipated that there will be a significant impact on small mammals in the area.

Mammals are protected from intentional crushing, asphyxiation or unnecessary suffering under the Wild Mammals (Protection) Act 1996. Hedgehog are listed as a priority species under Section 7 of the Environment (Wales) Act 2016, and as such there is a duty of care to try and protect hedgehogs and their habitat.

Recommendations for reptiles and amphibians during vegetation clearance, if required, will also be applicable to small mammals, as such small mammals will not be discussed further in this report (see Section 6.1.3).

#### 4.5 Birds

The scattered trees and scrub within the scheme were assessed as having potential for nesting, commuting, sheltering and foraging birds.

There is potential for any required vegetation clearance needed for the works to cause disturbance to nesting birds if undertaken during the breeding season (March to August inclusive). Implementation of recommendations in Section 6.1.4 will help ensure minimal impacts on birds.

Birds are protected under the Wildlife and Countryside Act 1981 (as amended) and it is an offence to damage or destroy a bird's nest whilst it is in use, or to kill or injure a bird, or to destroy an egg.

#### 4.6 Reptiles and Amphibians

There is a limited potential for reptiles and amphibians to be present within the scrub habitats on site, two large stone piles could also offer suitable basking areas for common reptiles and amphibians.

Reptiles and amphibians may be impacted by the proposed works through accidental injury/killing during vegetation clearance and potential movement of the stone piles. Providing vegetation clearance is undertaken under an appropriate method statement as detailed in Section 6.1.3 short and long-term impacts to reptiles/amphibians will be minimal.

Common reptiles are protected against intentional killing and injury under the Wildlife and Countryside Act 1981 (as amended). Amphibians are only protected from unlawful sale under the



WCA 1981 however, common toad (*Bufo bufo*) is listed under Section 7 of the Environment (Wales) Act 2016 as a species of principal importance for conserving biodiversity in Wales.

#### 4.7 Invertebrates

Due to the localised nature of the works on Maestaf Street Bridge, no significant impacts to invertebrates are anticipated. Impacts on aquatic invertebrates are also likely to be low following the implementation of pollution control measures provided in Section 6.1.9.

#### 4.8 Fish

There is potential for fish species to be present within the watercourse beneath Maestaf Street Bridge that leads from the River Taff.

Proposed works on the bridge have the potential to adversely impact fish locally and within the River Taff through pollution of the watercourse. Pollution prevention measures detailed in Section 6 will help ensure minimal impacts to fish.

Although the stream was shallow and had a large concrete culvert present, elevated water levels following periods of heavy rain may allow migratory fish species to travel upstream. Therefore, repairs to the bridge may have the potential to disturb spawning fish if in-channel works are required. It is an offence under Section 2 of the Salmon and Freshwater Fisheries Act 1975 (as amended), to wilfully disturb spawn, spawning fish, or spawning areas.

#### 4.9 Protected Plant Species

Bluebells were identified within the scattered trees at the time of the survey. The risk of damaging or destroying bluebell is however low providing measures outlined in Section 6.1.7 are implemented.

Bluebells are listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) and as such it is illegal to intentionally uproot, pick or destroy bluebell.

#### 4.10 Invasive Plant Species

The Schedule 9 invasive non-native species Japanese knotweed was recorded in abundance on the western banks of the stream, south of the bridge. One stand of yellow flag iris was also recorded on the western banks north of the bridge. Dependant on works being carried out, there is a potential for the proposed works to disturb and spread these invasive species downstream.

It is an offence to cause the unlawful spread of any invasive species as listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Recommendations detailed in Section 6 will ensure the risk of spreading Schedule 9 species is negated.

***Recommendations are made in Section 6 to ensure that the development is compliant with current wildlife legislation and has minimal impact on the above habitats and species.***

## 5. Conclusion

The River Taff SINC, although not within the survey boundary, has the potential to be impacted by the scheme in terms of pollution run off into the stream, originating from construction works on the bridge.

The site has potential to support priority species such as commuting and foraging bats and otter, reptiles, breeding birds and small mammals. Therefore, in the absence of mitigation the works have some potential to impact these species loss through habitat loss or fragmentation, damage/destruction of nesting sites and disturbance through noise, vibration and lighting.

No buildings or trees within the immediate works area were assessed as having any bat potential.

There is potential for Schedule 9 invasive non-native species to be spread by the proposed works, therefore a precautionary approach is recommended.

The recommendations provided in Section 6 should be followed to ensure that the proposed works on Maestaf Street Bridge adhere to best practice guidelines and are compliant with current wildlife legislation.

## 6. Recommendations for further survey, mitigation and enhancement

### 6.1 Mitigation

#### 6.1.1 *General Bat Mitigation*

General bat mitigation will be required for the duration of the works:

- Night working will be avoided, and all works will be carried out in daylight hours.
- If any bats are found in the duration of the works, work must stop immediately at that location and an appropriately licenced ecologist contacted immediately.

#### 6.1.2 *General Otter Mitigation*

- Night working will be avoided to negate disturbance to nocturnal animals.
- Any open/commuting pathways must be retained to allow commuting and foraging nocturnal animals to move freely.
- Any works compounds (and all machines and materials) must be located away from the watercourse, ideally on an area of hard standing. A suitable location will be agreed with an ecologist. Materials and machinery must be locked away in the compound outside of working hours.
- Any deep excavations must be securely fenced off and covered over outside working hours or provided with a sloping side or ramp to prevent animals becoming trapped.
- If an otter is discovered during the works, work must stop immediately at that location and an appropriately licenced ecologist contacted immediately.

#### 6.1.3 *Reptiles, Amphibians and Small Mammals*

A precautionary approach is recommended to avoid killing or injuring any reptiles and small mammals.

If vegetation clearance is required, an appropriate Method Statement for vegetation clearance to include reptiles and small mammals must be followed. The method statement is likely to include recommendations for timings of clearance work, a two-step cutting regime and ecological supervision. This method statement will also detail sensitive dismantlement of any rock piles by hand (where possible).

#### 6.1.4 *Birds*

If any vegetation/tree clearance is required, this must be undertaken outside of the breeding bird season (i.e., carried out between September and February inclusive) where possible. If work needs to be carried out within the breeding bird season (i.e., March to August inclusive) a check for active bird nests must be carried out by a suitably experienced ecologist prior to any work commencing. If an active bird nest is discovered, all work (within a radius to be agreed with an ecologist) will cease and the nest protected until all young have fledged, or the nest is no longer active.

#### 6.1.5 *Fish*

Pollution prevention measures as stated in Section 6.1.9 must be implemented to avoid pollution of the stream.

#### 6.1.6 *Invasive Plants*

An appropriate method statement to avoid the spread of Schedule 9 non-native invasive species such as Japanese knotweed will need to be provided by the contractor and followed for the duration of the works.

#### 6.1.7 *Protected Plant Species*

If areas of soil excavation are required and bluebell are encountered within the area of excavation, the topsoil (providing this is uncontaminated from pollution or invasive plant species) containing the bulbs will be translocated and placed in adjacent unaffected grassland areas. Advice will be sought from an ecologist to identify the most suitable location.

#### 6.1.8 *Toolbox Talk*

All site operatives will receive an ecological toolbox talk prior to commencement of works. The toolbox talk will be delivered by a suitably experienced ecologist and cover the ecological constraints on site and mitigation required. A reminder of the requirement to follow an appropriate method statement for invasive species will be included.

#### 6.1.9 *Pollution Control Measures*

Standard best practice and pollution control measures must be implemented in accordance with relevant guidance (e.g., CIRIA, 2001 and Environment Agency (2018)). Guidelines for Pollution Prevention (GPP), particularly GPP 5 Works and maintenance in or near water, outlined in NetRegs (NetRegs, 2018) to ensure that the stream linked to the River Taff SINC is not indirectly adversely affected by silt, dust, uncontrolled surface water run-off, inappropriate storage of materials and/or inappropriate refuelling of machinery. These measures must be detailed in a pollution prevention management plan.

- All materials (especially if hazardous or toxic) must be stored securely at least 7 m away from the watercourse.
- All static machinery must be placed on drip-trays or oil absorbent nappies, and trays emptied regularly to ensure that they contain any spills.
- Refuelling of machinery will not be carried out on site.
- Location of site compounds will be discussed with an ecologist prior to commencement of the works.

Works at the water's edge or in-channel will require implementation of silt prevention measures such as silt fencing. All materials used for riverbank protection must be chosen to ensure these do not pollute the watercourse.



## 6.2 Enhancement Opportunities

Planning Policy Wales 11 (2021) advocated the enhancement of biodiversity in relation to site development. The following measures are recommended to comply with this policy:

### 6.2.1 *Reptiles/Small Mammals/Invertebrates*

Creation of brash(log)/deadwood, stone piles (where possible) e.g., from branches/stem cuttings. Cuttings of various sizes can be placed in piles at a suitable location agreed with an ecologist to create shelter/deadwood habitat for invertebrates, mammals and reptiles (latter if in a sunny location).

To increase the biodiversity within the area and encourage hibernating invertebrates, installation of two bug boxes is recommended to be placed within the dense scrub areas within the survey boundary. These can be installed post works under guidance of an ecologist. Available at: <https://www.nhbs.com/bug-box>.

### 6.2.2 *Bat boxes*

A minimum of three woodcrete/woodcrete-type bat boxes (or similar make and specification) are recommended to be installed on a suitable tree in adjoining woodland areas. These can be installed post works under guidance of an ecologist.

Recommended models available at: <https://www.greenwoodsecohabitats.co.uk/shop>. The bat boxes should be positioned facing different aspects on the tree making sure two of the boxes face a south-west and south-easterly direction, and at a height of approximately 6 – 8 m above ground level with a clear flight path to and from the entrance.

### 6.2.3 *Bird boxes*

A minimum of two bird boxes should be installed on suitable trees in the adjoining scattered tree areas. Boxes should include both open fronted, and hole fronted boxes (the latter with entrance diameters of 26 mm and/or 32 mm). There is also scope for a dipper box to be located beneath the bridge providing water levels do not regularly get too high.

Recommended makes and models (similarly specified boxes can be used where recommended models are not available): <https://www.nhbs.com/vivara-pro-seville-32mm-woodstone-nest-box> or <https://www.nhbs.com/2m-schwegler-nest-box>.

*Advice should be sought from an ecologist to confirm box specifications and suitable siting locations for any bat and bird boxes implemented as part of the scheme.*

### 6.2.4 *Additional Planting*

If vegetation clearance is required, additional planting of the roadside verges with native tree/shrub species indicative of the area should be considered.

The landscaping design could include seeding of native woodland grass/wildflower mixes along the roadside verges and grassland edges. Planting of shrubs or small trees along the roadside verges in sparse areas could also be undertaken to improve the vegetative connectivity.

The area of bare ground previously cleared of vegetation to facilitate construction work on the culvert downstream of the bridge must be replanted with equal numbers of locally sourced native species hazel, beech and hawthorn. Plants should be of mixed age to provide structural diversity (recommended 60% whips, 30% feathered and 10% standard) and trees must be spaced at 2 m and the planting holes appropriately prepared using clean topsoil. Planting must also be carried out between November and March.

## 7. References

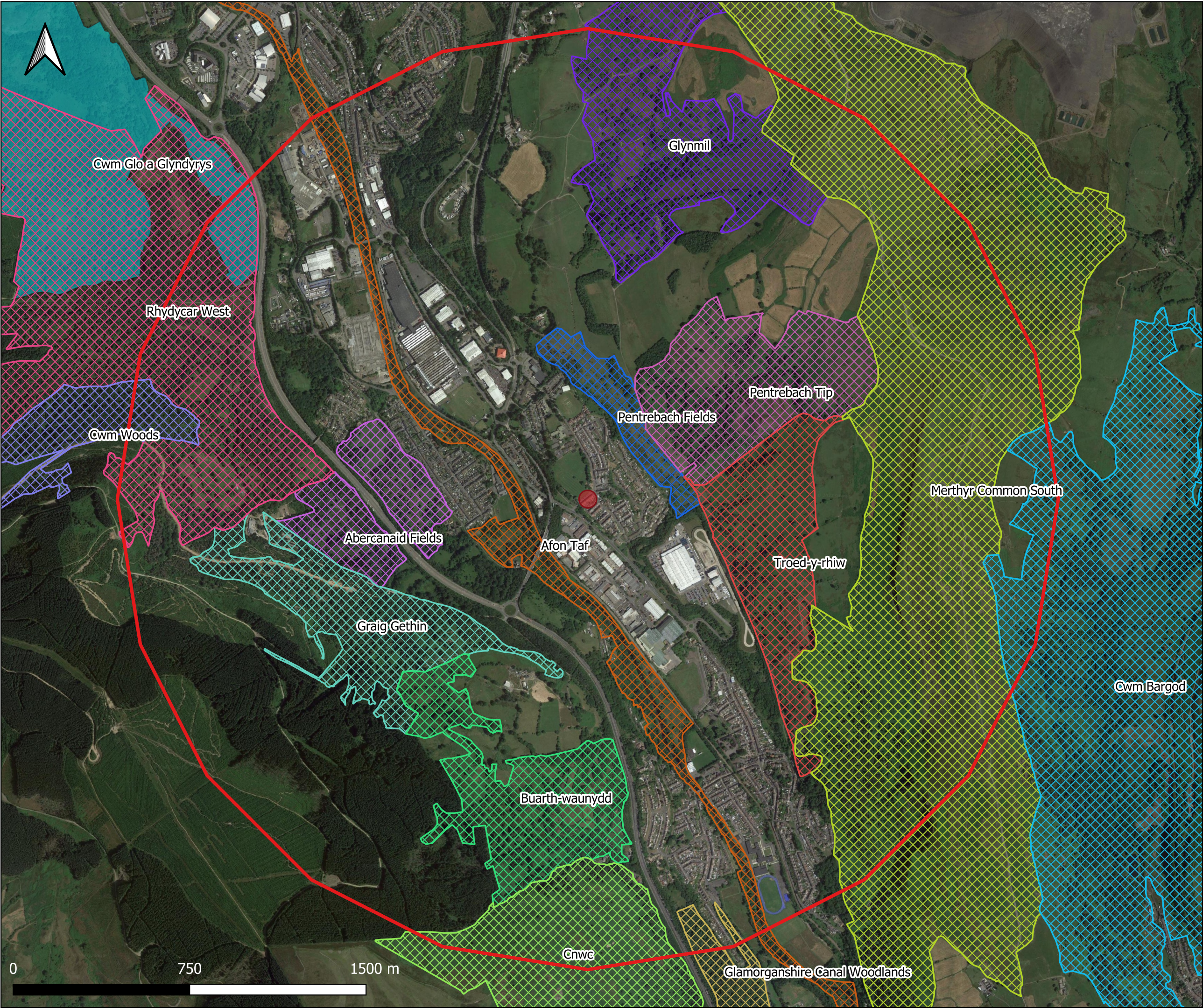
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# Drawings

GC4195-RED-74-XX-M2-L-3002 – Phase 1 Habitat Map

GC4195-RED-74-XX-M2-L-3001 – Designated Sites Map





Key

Central Grid Reference  
(Approx SO 06378 03539)

2km Radius

SINC

Abercanaid Fields

Afon Taf

Buarth-waunydd

Cnwc

Cwm Bargod

Cwm Woods

Glamorganshire Canal Woodlands

Glynmil

Graig Gethin

Merthyr Common South

Pentrebach Fields

Pentrebach Tip

Rhydycar West

Troed-y-rhiw

SSSI

Cwm Glo a Glyndyrys

Purpose of issue

S2 - Suitable for Information

Classification

Confidential - Internal Use Only

Client

Merthyr Tydfil County Borough Council

Project

Maestaf Street Bridge

Drawing Title

Designated Sites Map

Drawn

NP

Checked

AM

Approved

GP

Project No

GC/004195

Date

July 2022

Scale

1:15,000

Size

A3

Drawing identifier

GC4195-RED-74-XX-M2-L-3001

Revision:

P01

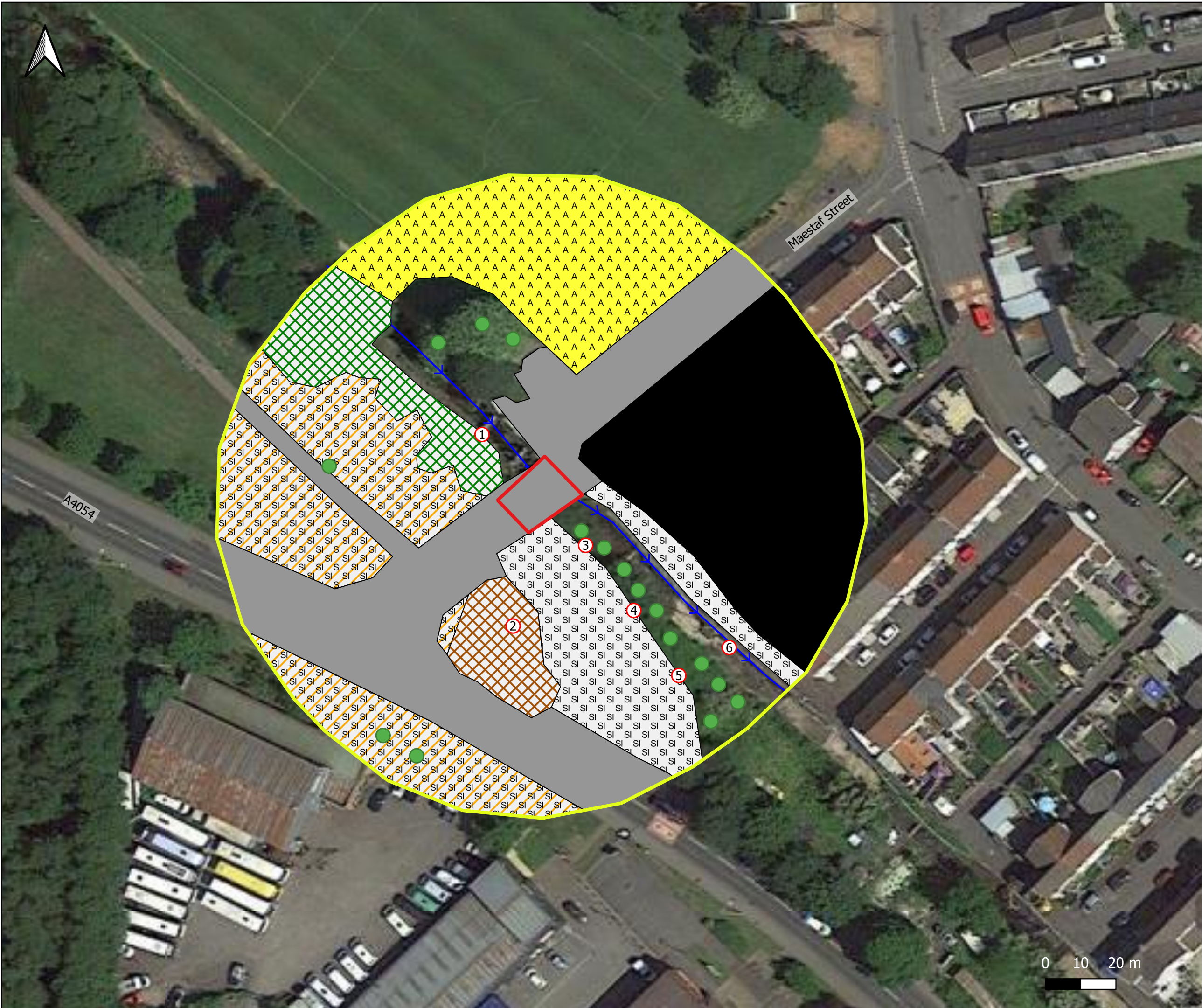
REDSTART

St David's House, Pascal Close, St Melons, Cardiff CF3 0LW

www.redstartwales.com

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- Key
- Target Notes
  - ▭ Maestaf Bridge
  - ▭ Survey Area
  - Scattered Trees
  - ▨ Scrub - dense/continuous
  - ▨ Acid grassland - semi-improved
  - ▨ Poor semi-improved grassland
  - ▨ Amenity grassland
  - ▨ Introduced shrub
  - Buildings
  - Hardstanding
  - Running Water

|                                                                                                                                                                                                                               |           |               |      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------|------|
| Purpose of issue                                                                                                                                                                                                              |           |               |      |
| S2 - Suitable for Information                                                                                                                                                                                                 |           |               |      |
| Classification                                                                                                                                                                                                                |           |               |      |
| Confidential - Internal Use Only                                                                                                                                                                                              |           |               |      |
| Client                                                                                                                                                                                                                        |           |               |      |
| Merthyr Tydfil County Borough Council                                                                                                                                                                                         |           |               |      |
| Project                                                                                                                                                                                                                       |           |               |      |
| Maestaf Street Bridge                                                                                                                                                                                                         |           |               |      |
| Drawing Title                                                                                                                                                                                                                 |           |               |      |
| Phase 1 Habitat Map                                                                                                                                                                                                           |           |               |      |
| Drawn                                                                                                                                                                                                                         | NP        | Checked       | AM   |
| Approved                                                                                                                                                                                                                      | GP        |               |      |
| Project No                                                                                                                                                                                                                    | Date      | Scale         | Size |
| GC/004195                                                                                                                                                                                                                     | July 2022 | 1:1,000       | A3   |
| Drawing identifier                                                                                                                                                                                                            |           | Revision: P01 |      |
| GC4195-RED-74-XX-M2-L-3002                                                                                                                                                                                                    |           |               |      |
| <div><br/><b>REDSTART.</b><br/><small>St David's House, Pascal Close, St Melons, Cardiff CF3 0LW<br/>www.redstartwales.com</small></div> |           |               |      |



# Appendix A – Legislation and Policy

## European Protected Species

European Protected Species are those species listed on Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. The list includes all species of bats, dormouse, great crested newt and otter. The species listed on Schedule 2 are afforded protection against:

- deliberate capture, injury or killing;
- deliberate disturbance;
- deliberate taking or destruction of the eggs;
- damage or destruction of a breeding site or resting place of such an animal.

Where a European protected species is present, a site may only proceed, under a licence issued by the relevant governing body i.e. Natural Resources Wales.

## Birds Directive (Directive 2009/147/EC)

Annex 1 of the Birds Directive lists species and sub-species which are:

- in danger of extinction;
- vulnerable to specific changes in their habitat;
- considered rare because of small populations or restricted local distribution;
- requiring particular attention for reasons of the specific nature of habitat.

For these species Member States must conserve their most suitable territories in number and size as Special Protection Areas (SPAs). Species listed on Annex 1 of the Birds Directive include kingfisher and red kite.

## Wildlife and Countryside Act 1981 (as amended)

### Schedule 1

All naturally occurring British bird species are protected under the Wildlife and Countryside Act 1981 (as amended). The legislation protects all birds, their nests and eggs and it is an offence to:

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

Birds listed on Schedule 1 of the above legislation (e.g., kingfisher and red kite) are afforded further protection and it is an offence to:

- intentionally or recklessly disturb the bird while nest building or while at (or near) a nest with eggs or young; or
- disturb the dependent young of such a bird.

## Schedule 5

Section 9 of the Wildlife and Countryside Act 1981 (as amended) offers varying degrees of protection to species including otter, bats, dormice, amphibians and reptiles. Animals listed on Schedule 5 of the Act are protected against one or more of the following:

- intentional killing, injuring or taking (not applicable to bats);
- intentional or reckless damage or destruction, or obstruction of access to any structure or place which any wild animal included in Schedule 5 uses for shelter or protection;
- disturbance of any such animal while it is occupying a structure or place which it uses for that purpose;
- sell, offer or exposes for sale, or has in his possession or transports for the purpose of sale, any live or dead wild animal included in Schedule 5, or any part of, or anything derived from such an animal.

## Schedule 8

Plant species listed on Schedule 8 are protected under Section 13 of the Wildlife and Countryside Act 1981 (as amended). Section 13 protects plants from:

- intentional picking, uprooting or destruction;
- selling, offering for sale, possessing or transporting for the purpose of sale (live or dead, part or derivative);
- advertising (any of these) for buying or selling.

## Schedule 9

Section 14 of the Wildlife and Countryside Act 1981 (as amended) makes it an offence to “plant or otherwise cause to grow in the wild any plant which is included in Part II of Schedule 9”.

## Protection of Badgers Act 1992

Badgers and their setts are protected under the Protection of Badgers Act 1992; the Act makes it an offence to:

- Kill, injure, take or attempt to kill, injure or take a badger; or
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett, or disturb a Badger whilst it is occupying a sett.

Any works within 30m of badger setts can only be carried out under a licence issued by Natural Resources Wales.

## Environment (Wales) Act 2016

Section 7 of the Environment (Wales) Act Section 7 lists the living organisms and types of habitat in Wales which are considered to be of key significance to sustain and improve biodiversity in relation to Wales.

The Act states that Welsh Ministers must take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section and encourage others to take such steps.

## UK BAP

UK BAP priority species are those that have been identified as being the most threatened and requiring conservation action. This includes (but is not limited to) species such as common toad, otter, great crested newt, slow worm, common lizard, brown long-eared bat, noctule and soprano pipistrelle.

## Red and Amber Lists

Red-listed bird species are those which:

- Are globally threatened;
- Have suffered a historical population decline in the UK during 1800–1995;
- Have suffered a severe (at least 50%) decline in the UK breeding population over the last 25 years, or longer-term period (the entire period used for assessments since the first review, starting in 1969);
- Have suffered a severe (at least 50%) contraction of the UK breeding range over the last 25 years, or the longer-term period;

Amber-listed bird species are those which:

- Have unfavourable conservation status in Europe (SPEC = Species of European Conservation Concern)
- Have suffered a historical population decline during 1800–1995, but recovering; population size has more than doubled over last 25 years
- Have suffered a moderate (25-49%) decline in the UK breeding population over the last 25 years, or the longer-term period
- Have suffered a moderate (25-49%) contraction of the UK breeding range over last 25 years, or the longer-term period
- Have suffered a moderate (25-49%) decline in the UK non-breeding population over last 25 years, or the longer-term period
- Are rare breeders; 1–300 breeding pairs in UK
- Are rare non-breeders; less than 900 individuals
- Are localised; at least 50% of the UK breeding or non-breeding population in 10 or fewer sites, but not applied to rare breeders or non-breeders
- Are internationally important; at least 20% of European breeding or non-breeding population in UK (NW European and East Atlantic Flyway populations used for non-breeding wildfowl and waders respectively)

## Nationally Scarce

These are species occurring in 16-100 hectads in Great Britain.

## Invasive Non-Native Species

Any non-native animal or plant that has the ability to spread causing damage to the environment, the economy, our health and the way we live.



## Appendix B – Protected/Notable Species Within 2 km (5 km for bats)

| Bats Within 5 km     |                                  |                                    |                   |                    |
|----------------------|----------------------------------|------------------------------------|-------------------|--------------------|
| Common Name          | Scientific Name                  | Legislation / Conservation Status  | Number of Records | Most Recent Record |
| Bats                 | <i>Chiroptera</i>                | EPS, WCA5                          | 10                | May 2014           |
| Brown long-eared bat | <i>Plecotus auritus</i>          | Bern, EPS, HDir, RD2(UK), S7, WCA5 | 4                 | August 2014        |
| Common pipistrelle   | <i>Pipistrellus pipistrellus</i> | Bern, EPS, HDir, RD2(UK), S7, WCA5 | 40                | June 2014          |
| Noctule bat          | <i>Nyctalus noctula</i>          | Bern, EPS, HDir, RD2(UK), S7, WCA5 | 8                 | August 2014        |
| Pipistrelle          | <i>Pipistrellus</i>              | EPS, WCA5                          | 3                 | August 2013        |
| Soprano pipistrelle  | <i>Pipistrellus pygmaeus</i>     | Bern, EPS, HDir, RD2(UK), S7, WCA5 | 23                | June 2016          |
| Unidentified bat     | <i>Myotis</i>                    | Bern, EPS, HDir, WCA5              | 3                 | August 2014        |

| Protected and Priority Species within 2km (Excluding bats) |                                 |                                    |                   |                    |
|------------------------------------------------------------|---------------------------------|------------------------------------|-------------------|--------------------|
| Common Name                                                | Scientific Name                 | Legislation / Conservation Status  | Number of Records | Most Recent Record |
| <b>Amphibians</b>                                          |                                 |                                    |                   |                    |
| Common frog                                                | <i>Rana temporaria</i>          | Bern, HDir, WCA5                   | 2                 | February 2021      |
| Common toad                                                | <i>Bufo bufo</i>                | Bern, S7, WCA5                     | 2                 | September 2015     |
| Great crested newt                                         | <i>Triturus cristatus</i>       | Bern, EPS, HDir, RD2(UK), S7, WCA5 | 1                 | September 2015     |
| <b>Birds</b>                                               |                                 |                                    |                   |                    |
| Brambling                                                  | <i>Fringilla montifringilla</i> | WBA, WCA1.1                        | 1                 | February 2011      |
| Common reed bunting                                        | <i>Emberiza schoeniclus</i>     | Bern, S7, UKBA, WBA                | 2                 | March 2013         |
| Cuckoo                                                     | <i>Cuculus canorus</i>          | S7, UKBR, WBR                      | 6                 | April 2020         |
| Curlew                                                     | <i>Numenius arquata</i>         | BDir2.2, S7, UKBR, WBR             | 1                 | February 2012      |
| Dunnoek                                                    | <i>Prunella modularis</i>       | Bern, S7, UKBA                     | 2                 | December 2020      |
| Eurasian bullfinch                                         | <i>Pyrrhula pyrrhula</i>        | S7, UKBA, WBR                      | 2                 | December 2020      |
| Eurasian skylark                                           | <i>Alauda arvensis</i>          | BDir2.2, S7, UKBR, WBA             | 6                 | 2017               |

|                              |                                 |                                             |   |               |
|------------------------------|---------------------------------|---------------------------------------------|---|---------------|
| European herring gull        | <i>Larus argentatus</i>         | BDir2.2, S7, UKBR, WBR                      | 9 | May 2017      |
| European pied flycatcher     | <i>Ficedula hypoleuca</i>       | S7, UKBR, WBR                               | 1 | May 2012      |
| Goshawk                      | <i>Accipiter gentilis</i>       | CITES, WCA1.1, WCA9                         | 5 | 2016          |
| Hobby                        | <i>Falco subbuteo</i>           | Bern, CITES, WCA1.1                         | 1 | April 2016    |
| House sparrow                | <i>Passer domesticus</i>        | S7, UKBR, WBA                               | 5 | December 2020 |
| Kestrel                      | <i>Falco tinnunculus</i>        | Bern, CITES, S7, UKBA, WBR                  | 7 | October 2018  |
| Lesser redpoll               | <i>Acanthis cabaret</i>         | S7, UKBR, WBA                               | 1 | January 2017  |
| Linnet                       | <i>Linaria cannabina</i>        | Bern, S7, UKBR, WBR                         | 3 | 2017          |
| Nightjar                     | <i>Caprimulgus europaeus</i>    | BDir1, Bern, S7, UKBA, WBA                  | 3 | May 2016      |
| Peregrine                    | <i>Falco peregrinus</i>         | BDir1, Bern, CITES, WCA1.1                  | 3 | 2015          |
| Red crossbill                | <i>Loxia curvirostra</i>        | Bern, WCA1.1                                | 1 | April 2012    |
| Red kite                     | <i>Milvus milvus</i>            | BDir1, CITES, WBA, WCA1.1, WCA9             | 9 | November 2020 |
| Song thrush                  | <i>Turdus philomelos</i>        | BDir2.2, Bern, S7, UKBR, WBA                | 3 | February 2020 |
| Spotted flycatcher           | <i>Muscicapa striata</i>        | Bern, S7, UKBR, WBR                         | 1 | May 2016      |
| Starling                     | <i>Sturnus vulgaris</i>         | BDir2.2, Bern, S7, UKBR, WBR                | 2 | December 2020 |
| Tree pipit                   | <i>Anthus trivialis</i>         | Bern, S7, UKBR, WBA                         | 5 | June 2018     |
| Western barn owl             | <i>Tyto alba</i>                | Bern, CITES, WCA1.1, WCA9                   | 3 | February 2021 |
| Wood warbler                 | <i>Phylloscopus sibilatrix</i>  | S7, UKBR, WBR                               | 3 | May 2018      |
| <b>Invertebrates</b>         |                                 |                                             |   |               |
| Brown-banded carder-bee      | <i>Bombus humilis</i>           | S7                                          | 1 | July 2016     |
| Dark-barred twin-spot carpet | <i>Xanthorhoe ferrugata</i>     | S7                                          | 1 | May 2012      |
| Grayling                     | <i>Hipparchia semele</i>        | RD1(UK)VU, S7, LI[SEWBRc]                   | 1 | August 2021   |
| Marsh fritillary             | <i>Euphydryas aurinia</i>       | Bern, HDir, RD1(UK)VU, S7, WCA5, LI[SEWBRc] | 1 | May 2020      |
| Rosy rustic                  | <i>Hydraecia micacea</i>        | S7                                          | 1 | August 2015   |
| Shaded broad-bar             | <i>Scotopteryx chenopodiata</i> | S7                                          | 1 | August 2021   |
| Small heath                  | <i>Coenonympha pamphilus</i>    | RD1(UK)NT, S7                               | 1 | August 2021   |
| Small square-spot            | <i>Diarsia rubi</i>             | S7                                          | 1 | August 2016   |
| White ermine                 | <i>Spilosoma lubricipeda</i>    | S7                                          | 2 | May 2012      |

| <b>Mammals</b>         |                                   |                         |    |                |
|------------------------|-----------------------------------|-------------------------|----|----------------|
| Eurasian badger        | <i>Meles meles</i>                | Bern, PBA               | 3  | May 2018       |
| Polecat                | <i>Mustela putorius</i>           | Bern, HDir, RD2(UK), S7 | 1  | June 2017      |
| Weasel                 | <i>Mustela nivalis</i>            | Bern, NRW               | 1  | March 2014     |
| West European hedgehog | <i>Erinaceus europaeus</i>        | Bern, S7                | 10 | March 2021     |
| <b>Plants</b>          |                                   |                         |    |                |
| Stag's-horn clubmoss   | <i>Lycopodium clavatum</i>        | CITES, HDir, S7         | 1  | February 2018  |
| <b>Reptiles</b>        |                                   |                         |    |                |
| Common lizard          | <i>Zootoca vivipara</i>           | Bern, S7, WCA5          | 2  | September 2015 |
| Grass snake            | <i>Natrix helvetica helvetica</i> | Bern, S7, WCA5          | 1  | February 2016  |
| Slow-worm              | <i>Anguis fragilis</i>            | Bern, S7, WCA5          | 3  | May 2021       |

| <b>Species of Conservation Concern within 2 km</b> |                                |                                   |                   |                    |
|----------------------------------------------------|--------------------------------|-----------------------------------|-------------------|--------------------|
| Common Name                                        | Scientific Name                | Legislation / Conservation Status | Number of Records | Most Recent Record |
| <b>Birds</b>                                       |                                |                                   |                   |                    |
| Common sandpiper                                   | <i>Actitis hypoleucos</i>      | UKBA, WBR                         | 1                 | May 2013           |
| Cormorant                                          | <i>Phalacrocorax carbo</i>     | WBA                               | 1                 | April 2012         |
| European green woodpecker                          | <i>Picus viridis</i>           | Bern, WBA                         | 4                 | December 2020      |
| Goldcrest                                          | <i>Regulus regulus</i>         | Bern, WBA                         | 1                 | March 2013         |
| Greenfinch                                         | <i>Chloris chloris</i>         | Bern, WBA                         | 2                 | March 2016         |
| Grey heron                                         | <i>Ardea cinerea</i>           | WBA                               | 4                 | January 2019       |
| Lesser black-backed gull                           | <i>Larus fuscus</i>            | BDir2.2, UKBA, WBA                | 11                | 2017               |
| Long-tailed tit                                    | <i>Aegithalos caudatus</i>     | WBA                               | 5                 | December 2020      |
| Mallard                                            | <i>Anas platyrhynchos</i>      | BDir2.1, UKBA, WBA                | 2                 | April 2012         |
| Meadow pipit                                       | <i>Anthus pratensis</i>        | Bern, UKBA, WBA                   | 5                 | 2019               |
| Mistle thrush                                      | <i>Turdus viscivorus</i>       | BDir2.2, Bern, UKBR, WBA          | 6                 | December 2020      |
| Redstart                                           | <i>Phoenicurus phoenicurus</i> | Bern, UKBA, WBA                   | 3                 | May 2017           |
| Swallow                                            | <i>Hirundo rustica</i>         | Bern, WBA                         | 9                 | 2015               |
| Swift                                              | <i>Apus apus</i>               | UKBA, WBA                         | 3                 | May 2017           |
| Wheatear                                           | <i>Oenanthe oenanthe</i>       | Bern, WBA                         | 5                 | 2013               |
| Whinchat                                           | <i>Saxicola rubetra</i>        | Bern, UKBR, WBR                   | 1                 | May 2012           |



|                    |                               |                                         |    |      |
|--------------------|-------------------------------|-----------------------------------------|----|------|
| Whitethroat        | <i>Curruca communis</i>       | WBR                                     | 3  | 2017 |
| Willow warbler     | <i>Phylloscopus trochilus</i> | UKBA, WBR                               | 14 |      |
| <b>Plants</b>      |                               |                                         |    |      |
| Balding pincushion | <i>Ulotia calvescens</i>      | RD1(Wales)EN, LI[LR, VC45, VC48, WWBIC] | 2  | 2015 |

| <b>Invasive Non- Native Species within 2 km</b> |                               |                                   |                   |                    |
|-------------------------------------------------|-------------------------------|-----------------------------------|-------------------|--------------------|
| Common Name                                     | Scientific Name               | Legislation / Conservation Status | Number of Records | Most Recent Record |
| <b>Invertebrates</b>                            |                               |                                   |                   |                    |
| Harlequin ladybird                              | <i>Harmonia axyridis</i>      | INNS                              | 1                 | October 2018       |
| <b>Mammals</b>                                  |                               |                                   |                   |                    |
| Eastern grey squirrel                           | <i>Sciurus carolinensis</i>   | INNS, WCA9                        | 3                 | April 2012         |
| <b>Plants</b>                                   |                               |                                   |                   |                    |
| Himalayan balsam                                | <i>Impatiens glandulifera</i> | INNS, WCA9                        | 1                 | March 2013         |
| Heath star moss                                 | <i>Campylopus introflexus</i> | INNS                              | 3                 | February 2018      |
| Japanese knotweed                               | <i>Fallopia japonica</i>      | INNS, WCA9                        | 23                | March 2013         |

| <b>Legislation: Abbreviations</b> |                                                                                 |                   |                                                                                       |
|-----------------------------------|---------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------|
| <b>ANG</b>                        | Anglesey County Council Local Biodiversity Action Plan                          | <b>RD1(UK)</b>    | Red Data Book listing for the UK based on IUCN guidelines                             |
| <b>AONB</b>                       | Area of Outstanding Natural Beauty                                              | <b>RD1(Wales)</b> | Red Data Book listing for Wales based on IUCN guidelines                              |
| <b>AW</b>                         | Ancient Woodland                                                                | <b>RD2(UK)</b>    | Red Data Book listing for the UK not based on IUCN guidelines                         |
| <b>BAP</b>                        | UK Biodiversity Action Plan                                                     | <b>RIGS</b>       | Regionally Important Geodiversity Site                                                |
| <b>BBNP</b>                       | Brecon Beacons National Park Local Biodiversity Action Plan                     | <b>S7</b>         | Environment (Wales) Act 2016 (Section 7)                                              |
| <b>BDir1</b>                      | EU Birds Directive Annex 1                                                      | <b>SAC</b>        | Special Area of Conservation                                                          |
| <b>BDir2.1</b>                    | EU Birds Directive Annex 2.1                                                    | <b>SINC</b>       | Sites of Importance for Nature Conservation                                           |
| <b>BDir2.2</b>                    | EU Birds Directive Annex 2.2                                                    | <b>SNP</b>        | Snowdonia National Park Local Biodiversity Action Plan                                |
| <b>Bern</b>                       | Bern Convention on the Conservation of European Wildlife and Natural Habitats   | <b>SPA</b>        | Special Protection Area                                                               |
| <b>BGW</b>                        | Blaenau Gwent County Borough Council Local Biodiversity Action Plan             | <b>SSSI</b>       | Site of Special Scientific Interest                                                   |
| <b>Bonn</b>                       | Bonn Convention on the Conservation of Migratory Species of Wild Animals        | <b>TRF</b>        | Torfaen County Borough Council Local Biodiversity Action Plan                         |
| <b>BRG</b>                        | Bridgend County Borough Council Local Biodiversity Action Plan                  | <b>UKBA</b>       | RSPB UK Birds Amber List (not based on IUCN criteria)                                 |
| <b>CER</b>                        | Ceredigion County Council Local Biodiversity Action Plan                        | <b>UKBR</b>       | RSPB UK Birds Red List (not based on IUCN criteria)                                   |
| <b>CITES</b>                      | Convention on International Trade in Endangered Species of Wild Fauna and Flora | <b>VOG</b>        | Vale of Glamorgan Council Local Biodiversity Action Plan                              |
| <b>CLY</b>                        | Caerphilly County Borough Council Local Biodiversity Action Plan                | <b>WBA</b>        | RSPB Welsh Birds Amber List (not based on IUCN criteria)                              |
| <b>CON</b>                        | Conwy County Borough Council Local Biodiversity Action Plan                     | <b>WBR</b>        | RSPB Welsh Birds Red List (not based on IUCN criteria)                                |
| <b>CRM</b>                        | Carmarthenshire County Council Local Biodiversity Action Plan                   | <b>WCA1.1</b>     | Wildlife & Countryside Act 1981 Schedule 1.1 (Birds which are protected at all times) |

| Legislation: Abbreviations |                                                                         |                      |                                                                                                                                                                                                                         |
|----------------------------|-------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DEN</b>                 | Denbighshire County Council Local Biodiversity Action Plan              | <b>WCA1.2</b>        | Wildlife & Countryside Act 1981 Schedule 1.2 (Birds which are protected at certain times)                                                                                                                               |
| <b>EPS</b>                 | European Protected Species                                              | <b>WCA5</b>          | Wildlife & Countryside Act 1981 Schedule 5 (Animals which are protected from killing and taking, possession, disturbance and sale)                                                                                      |
| <b>FLI</b>                 | Flintshire County Council Local Biodiversity Action Plan                | <b>WCA8</b>          | Wildlife & Countryside Act 1981 Schedule 8 (Plants which are protected)                                                                                                                                                 |
| <b>GWY</b>                 | Gwynedd County Council Local Biodiversity Action Plan                   | <b>WCA9</b>          | Wildlife & Countryside Act 1981 Schedule 9 (Non-native animals and plants which are established in the wild)                                                                                                            |
| <b>HDir</b>                | EU Habitats Directive                                                   | <b>WRE</b>           | Wrexham County Council Local Biodiversity Action Plan                                                                                                                                                                   |
| <b>INNS</b>                | Invasive Non-native Species                                             | <b>WS</b>            | Wildlife Site                                                                                                                                                                                                           |
| <b>LBAP</b>                | Local Biodiversity Action Plan species for the listed area              | <b>WVP</b>           | IUCN Threat Listing of Welsh Vascular Plants                                                                                                                                                                            |
| <b>LI</b>                  | Locally Important within the listed area                                | <b>LBAP (xxx)</b>    | Local Biodiversity Action Plan Species (see key below)                                                                                                                                                                  |
| <b>LNR</b>                 | Local Nature Reserve                                                    | <b>LI(SEWBRc)</b>    | Locally Important Species (as identified by local specialists) in SEWBRc area.                                                                                                                                          |
| <b>MNR</b>                 | Marine Nature Reserve                                                   | <b>LI (BIS)</b>      | Locally Important Species (as identified by local specialists) in BIS* area.                                                                                                                                            |
| <b>MON</b>                 | Monmouthshire County Council Local Biodiversity Action Plan             | <b>LI (BRYO-MON)</b> | Locally or nationally scarce or rare bryophyte in Monmouthshire.                                                                                                                                                        |
| <b>MTR</b>                 | Merthyr Tydfil County Borough Council Local Biodiversity Action Plan    | <b>LI (VC##)</b>     | Locally Important Species (as identified by local specialists) in Vice County ##                                                                                                                                        |
| <b>NEW</b>                 | Newport City Council Local Biodiversity Action Plan                     | <b>LI (VC##, LS)</b> | Locally Scarce in Vice County ##                                                                                                                                                                                        |
| <b>NNR</b>                 | National Nature Reserve                                                 | <b>LI (VC##, LR)</b> | Locally Rare in Vice County ##                                                                                                                                                                                          |
| <b>NRW</b>                 | Natural Resources Wales Priority Species                                | <b>LI (VC##, EX)</b> | Extinct in Vice County ##                                                                                                                                                                                               |
| <b>PBA</b>                 | Protection of Badgers Act 1992                                          | <b>LI (VC##, UR)</b> | Under Recorded in Vice County ##                                                                                                                                                                                        |
| <b>PEM</b>                 | Pembrokeshire County Council Local Biodiversity Action Plan             | <b>##</b>            | Vice County number. For more information on Vice Counties please visit the BBS website. <a href="https://websites.rbge.org.uk/bbs/recording/vcmappage.htm">https://websites.rbge.org.uk/bbs/recording/vcmappage.htm</a> |
| <b>POW</b>                 | Powys County Council Local Biodiversity Action Plan                     | <b>* BIS</b>         | Biodiversity Information Service for Powys and Brecon Beacons National Park                                                                                                                                             |
| <b>RCT</b>                 | Rhondda Cynon Taf County Borough Council Local Biodiversity Action Plan |                      |                                                                                                                                                                                                                         |

## Appendix C – Botanical Species List

| Common Name                         | Scientific Name                  | ACFOR |
|-------------------------------------|----------------------------------|-------|
| <b>Scattered Trees</b>              |                                  |       |
| Dogwood                             | <i>Cornus sanguinea</i>          | A     |
| Sycamore                            | <i>Acer pseudoplatanus</i>       | O     |
| Garden privet                       | <i>Ligustrum ovalifolium</i>     | O     |
| Rowan                               | <i>Sorbus aucuparia</i>          | O     |
| Field maple                         | <i>Acer campestre</i>            | O     |
| Beech                               | <i>Fagus sylvatica</i>           | O     |
| Holly                               | <i>Ilex aquifolium</i>           | R     |
| <b>Dense scrub</b>                  |                                  |       |
| Bramble                             | <i>Rubus fruticosus</i> agg.     | A     |
| Common nettle                       | <i>Urtica dioica</i>             | F     |
| Hawthorn                            | <i>Crataegus monogyna</i>        | O     |
| Willow species                      | <i>Salix</i> sp.                 | O     |
| Hedge bindweed                      | <i>Calystegia sepium</i>         | O     |
| Dock species                        | <i>Rumex</i> sp.                 | O     |
| Cleavers                            | <i>Galium aparine</i>            | R     |
| Crack willow                        | <i>Salix fragilis</i>            | R     |
| <b>Introduced shrub</b>             |                                  |       |
| Dogwood                             | <i>Cornus sanguinea</i>          | A     |
| Coral berry                         | <i>Ardisia crenata</i>           | A     |
| Hedge bindweed                      | <i>Calystegia sepium</i>         | C     |
| Bramble                             | <i>Rubus fruticosus</i> agg.     | F     |
| Hazel                               | <i>Corylus avellana</i>          | O     |
| Silver birch                        | <i>Betula pendula</i>            | O     |
| Cleavers                            | <i>Galium aparine</i>            | O     |
| Common nettle                       | <i>Urtica dioica</i>             | O     |
| Bluebell                            | <i>Hyacinthoides non-scripta</i> | R     |
| <b>Poor semi-improved grassland</b> |                                  |       |
| Perennial ryegrass                  | <i>Lolium perenne</i>            | A     |
| Dandelion                           | <i>Taraxacum officinale</i> agg. | C     |
| Yorkshire-fog                       | <i>Holcus lanatus</i>            | C     |
| Common bent                         | <i>Agrostis capillaris</i>       | C     |
| White clover                        | <i>Trifolium repens</i>          | C     |
| Ribwort plantain                    | <i>Plantago lanceolata</i>       | F     |
| Daisy                               | <i>Bellis perennis</i>           | F     |
| Dandelion                           | <i>Taraxacum officinale</i> agg. | F     |
| Broad-leaved dock                   | <i>Rumex obtusifolius</i>        | O     |
| Cock's-foot                         | <i>Dactylis glomerata</i>        | O     |
| Common nettle                       | <i>Urtica dioica</i>             | O     |
| Creeping buttercup                  | <i>Ranunculus repens</i>         | O     |
| Ground ivy                          | <i>Glechoma hederacea</i>        | O     |
| Crested dog's-tail                  | <i>Cynosurus cristatus</i>       | O     |
| Bird's-foot trefoil                 | <i>Lotus corniculatus</i>        | O     |
| Cow parsley                         | <i>Anthriscus sylvestris</i>     | O     |
| Red clover                          | <i>Trifolium pratense</i>        | O     |
| Ragwort                             | <i>Jacobaea vulgaris</i>         | R     |
| Yarrow                              | <i>Achillea millefolium</i>      | R     |
| Barren strawberry                   | <i>Potentilla sterilis</i>       | R     |
| Thistle species                     | <i>Cirsium</i> sp.               | R     |
| Crane's-bill species                | <i>Geranium</i> sp.              | R     |



| Common Name                       | Scientific Name                  | ACFOR |
|-----------------------------------|----------------------------------|-------|
| <b>Amenity grassland</b>          |                                  |       |
| Perennial ryegrass                | <i>Lolium perenne</i>            | A     |
| Dandelion                         | <i>Taraxacum officinale</i> agg. | O     |
| Daisy                             | <i>Bellis perennis</i>           | O     |
| Creeping buttercup                | <i>Ranunculus repens</i>         | O     |
| White clover                      | <i>Trifolium repens</i>          | O     |
| Yorkshire-fog                     | <i>Holcus lanatus</i>            | F     |
| <b>Northern riverbank species</b> |                                  |       |
| Hemlock water dropwort            | <i>Oenanthe crocata</i>          | A     |
| Bramble                           | <i>Rubus fruticosus</i> agg.     | C     |
| Hogweed                           | <i>Heracleum sphondylium</i>     | C     |
| Broad-leaved dock                 | <i>Rumex obtusifolius</i>        | O     |
| Rosebay willowherb                | <i>Chamerion angustifolium</i>   | O     |
| Pondweed species                  | <i>Potamogeton</i> sp.           | O     |
| Yellow flag iris                  | <i>Iris pseudacorus</i>          | O     |
| Hedge bindweed                    | <i>Calystegia sepium</i>         | F     |
| Bamboo species                    | <i>Bambusoideae</i> sp.          | F     |
| Foxglove species                  | <i>Digitalis</i> sp.             | F     |

## Appendix D – Target Notes

| Target Note Number | Description                                  | Grid Reference |
|--------------------|----------------------------------------------|----------------|
| 1                  | Yellow flag iris                             | SO 06367 03537 |
| 2                  | Bluebells                                    | SO 06375 03499 |
| 3                  | Japanese knotweed patch                      | SO 06388 03513 |
| 4                  | Japanese knotweed patch                      | SO 06396 03502 |
| 5                  | Two large rubble piles suitable for reptiles | SO 06404 03489 |
| 6                  | Japanese knotweed on opposite bank           | SO 06413 03494 |

# REDSTART

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