

Feeder Pipe Bridge

PRELIMINARY ECOLOGICAL APPRAISAL (PEA) REPORT (P02)

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Feeder Pipe Bridge
Preliminary Ecological Appraisal (PEA)

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Appendix C- Target Notes
Appendix D- Botanical Species List

Non-Technical Summary

Site Location	Central Grid Reference for Feeder Pipe Bridge: ST 09208 95484
Proposed Development	Construction of a new bridge crossing at or near the location of the recently demolished Feeder Pipe Bridge, to include associated repairs to abutments /walls and linking infrastructure to facilitate public access to the crossing.
Date of survey and names of surveyors	Preliminary Ecological Appraisal 14 th November 2020 Trevor Fletcher (Ecologist) and Emma Carney (Graduate Ecologist).
Overview of Results	• No Statutory designated sites lie within 1 km of the site • 12 Non-statutory designated sites lay within 1 km of the site, including two within the site boundary. • Priority habitats river and lowland mixed deciduous woodland were present on site. • Ancient woodland was present on site. • Habitats on site were suitable for bats to roost, forage and commute. • Habitat on site was suitable for the presence of otter. • There was some suitable habitat for dormouse on site. • Habitats on site were suitable for badger to feed and commute. • There was some habitat suitable for common reptile and amphibian species to be present. • Habitats across the site were suitable for a range of invertebrate species. • Invasive non-native species Japanese knotweed, Himalayan balsam and crocosmia were present on site.
Further Survey	• Otter survey • Bat survey
Recommendations	• Damage to priority habitat on site should be avoided where possible and at least kept to a minimum. • General bat mitigation. • General otter mitigation. • If a badger sett is discovered during works the area should be avoided and an ecologist contacted for advice before works can continue. • A dormouse method statement should be produced for any vegetation clearance works on site. • A combined method statement for amphibians, reptiles and hedgehog should be produced for any vegetation clearance work on site. • Vegetation clearance and tree removal should be undertaken outside the bird breeding season (i.e. works should be conducted between September and February inclusive) or under ecological supervision.

	• Siting of plant and machinery should ideally be on areas of existing hard standing, not within 7 m of any watercourse. Alternative siting should be discussed with an ecologist prior to commencement of works. • Any excavation should be covered overnight or when not in use or fitted with a ramp as a means of escape to prevent animals becoming trapped. • Suitable pollution prevention measures, forming part of a Construction Environmental Management Plan (CEMP), should be employed to all works to avoid pollution of the pond • The appointed contractor should provide an appropriate Invasive Species Method Statement for the proposed works that should be followed for the duration of on- site activities. • All site personnel should receive a toolbox talk, provided by an experienced ecologist, prior to commencing work on site. •
Enhancement	• Installation of bat boxes. • Installation of bird boxes. • Creation oof hibernacula for reptiles and amphibians.

1. Introduction

Redstart was commissioned by Rhondda Cynon Taf County Borough Council (RCTCBC) to undertake a Preliminary Ecological Appraisal (PEA) of an area centred on Feeder Pipe Bridge, near Abercynon, Rhondda Cynon Taf (Central Grid Reference ST 09208 95484).

The survey was undertaken to identify any constraints that may present to the proposed development and to identify the need for further surveys/ mitigation measures.

This report includes details of the survey methodologies, results and discussion and contains recommendations for further survey/ mitigation where appropriate.

1.1 Site Description

Feeder Pipe Bridge spans the River Taff approximately 1 km north-east of Abercynon town centre, Rhondda Cynon Taf. Feeder Pipe Bridge lies between two road bridge crossings carrying the A472 to the north and A470 to the south-west.

Land use in the surrounding area was predominantly agricultural with scattered farmsteads and residential dwellings.

The site location is illustrated in figure 1 and hereafter referred to as 'the site'. The wider area surveyed during the Preliminary Ecological Appraisal includes the site and up to 100 m outside the boundary (shown in Drawing GC3880-RED-74-XX-DR-L-0003) and is referred to as the 'survey area' in this report.

Figure 1: Location of Feeder Pipe Bridge (red rectangle-not to scale). Adapted from Google Earth. (Google Earth, 2021).



1.2 Proposed Works

The construction of a new bridge at or near the location of the previous bridge crossing (Feeder Pipe Bridge), which was dismantled and removed from site during September and October 2020, is proposed. Design and location of the new bridge is at optioneering stage and it has not been determined whether the existing abutments and piers will be utilised for the new structure. The bridge had been assessed as being irreparably damaged during storm flood events in the winter of 2020. The previous bridge was supported on existing stone piers and abutments, carrying three redundant but structurally intact ironwork pipes which were left in situ.

Works to include:

- Construction of a new bridge crossing
- Repair to existing abutments
- Possible removal of one of the feeder pipes
- Scour repair; and
- Linking works to provide public access

1.3 Planning Policy and Legislation

A full description of wildlife planning policy and legislation is provided in Appendix A; most relevant to the proposed scheme are described as follows.

Species such as bats, otter, breeding birds and a range of terrestrial mammals are likely to be present within the site and/or utilising adjacent habitat and therefore may be impacted by the proposed works. These species have varying degrees of protection from either killing, injury, destruction of shelter/nests and disturbance under the following legislation:

- Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019;
- Wildlife and Countryside Act 1981 (as amended);
- Environment (Wales) Act 2016; and
- Wild Mammals (Protection) Act 1996.

River and lowland mixed deciduous woodland on site are listed under Section 7 of the Environment (Wales) Act 2016. 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.

Furthermore, Planning Policy Wales (11th Ed. 2021) states, in section 6.4.5 that, 'planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity.'

2. Methodology

2.1 Desk Study

A desk study was undertaken to identify ecological information relating to the proposed development site and its surroundings. The following organisations/ websites were consulted during June 2021.

A request to the South East Wales Biodiversity Records Centre (SEWBRc) was made for information on any ecologically designated sites, habitats and protected species or species of conservation concern within a 1 km radius (5 km for bats) of the proposed development site (SEWBRc, 2021). 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, 2021) was accessed to search for additional statutory designated sites i.e., Special Areas of Conservation (SAC) sites specifically designated for bats.

The Natural Resources Wales online Lle Ancient Woodland (AW) Inventory interactive map (NRW, 2011) was consulted in June 2021 to identify tree preservation orders (TPOs) or AW areas within 100 m of the proposed scheme.

Rhondda Cynon Taff Technical Support Officer was contacted for information regarding TPOs within the survey area in July 2021. (*Pers. Comm*, 2021))

Aerial photographs and Ordnance Survey (OS) maps were reviewed to identify features with potential significance in relation to habitats and species on site.

2.2 Field Survey

Extended Phase 1 Habitat Survey

The Extended Phase 1 Habitat survey was undertaken on 14th November 2020 by Trevor Fletcher (Ecologist) and Emma Carney (Graduate Ecologist). Survey methodology was based on Phase 1 habitat survey techniques (JNCC, 2010).

The survey comprised a thorough walkover of the site to map habitats. Dominant plant species were noted, as were any uncommon species or species indicative of distinct habitat types.

The relative abundance of each plant species was recorded using the Abundant, Common, Frequent, Occasional, Rare (ACFOR) scale. 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.

Invasive non-native plant species were recorded where encountered.

The outputs of the PEA survey include a Phase 1 habitat map and a set of target notes (TN) which are illustrated on Drawing GC3880-RED-74-XX-DR-L-0003 and detailed in Appendix C.

2.3 Survey constraints

Phase 1 Habitat surveys can be undertaken at any time of the year; however, the optimal period is between April and September (inclusive). This survey was conducted in November, outside the optimal period. Some plant species may not have been detectable; however, sufficient key species were still identifiable for the distinct habitat types on site to be accurately classified and spatially mapped.

Bankside vegetation on the south-east side of the River Taff was inaccessible owing to the bridge access being fenced off for public safety and other access points being on a steep slope which prevented access for health and safety reasons. Vegetation along the upstream and downstream side of the river was observed from the opposite bank using binoculars and a high-magnification telescope which allowed broad habitat types to be accurately recorded.

Any ecological survey can only identify what was present in the survey area at the time it was conducted, and habitat use by species can change over time. The length of time that the survey data remains valid will depend on a case-by-case basis, but it is generally considered that if the development or proposed works do not commence within 2 years of the date of this report an update may be required. Survey results presented in this report remain valid until November 2022. Desktop data although more recent will also benefit an update at this time.

3. Results

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

3.1.1 Statutory Designated Sites

There were no statutory designated sites (e.g. Sites of Special Scientific Interest) within 1km of the central grid reference for the site (ST 09208 95484).

3.1.2 Non- statutory Designated Sites

There were 12 non-statutory sites (e.g., Site of Importance for Nature Conservation (SINCs)) located within 1 km of the development site and are detailed in Table 2.

Non-statutory designated sites are illustrated on Drawing GC3880-RED-DR-L-0002.

Table 2: Non-statutory sites within 1 km of Feeder Pipe Bridge

Name	Designation	Designatory features	Distance and direction from structure
Taff and Rhondda Rivers	SINC	The River Taff is the main river of the County Borough and a major biodiversity artery. The river and its bank side habitats are extremely diverse and varied. The river supports kingfisher (<i>Alcedo atthis</i>), sand martin (<i>Riparia riparia</i>), otter (<i>Lutra lutra</i>), salmon (<i>Salmo salar</i>) and brown trout (<i>Salmo trutta</i>). The river contains shingle banks, undercut bank sections, and riparian woodland.	0 m
Lower Taf & Edwardsville Woods	SINC	Ancient semi-natural woodland with rich ground flora. A wide range of bird species	0 m – east side of River Taff

		and grassland areas important for reptiles.	
Whitehall Golf Course	SINC	A small SINC within Merthyr County Borough that is an extension of Graig - Evan Lyshon which falls within Rhondda Cynon Taf Borough. See description for Graig -Evan Lyshon for SINC details.	92 m – east
Craig-Evan Leyshon Common	SINC	An extensive mosaic ffridd, which runs along the eastern flank of the Taff valley. Bracken dominates huge areas with an understory of acid grassland. The SINC includes vegetating coil spoil tips, the relic ancient woodlands of Craig Pant-du Isaf, and the clean fast-flowing stream of Nant cae-dudwg which supports dipper (<i>Cinclus cinclus</i>), kingfisher and Daubenton's bats (<i>Myotis daubentonii</i>). Grayling (<i>Hipparchia semele</i>) butterflies occur on the coal spoil grasslands and adder (<i>Vipera berus</i>) occur within the main Common.	300 m south
Cwm Mafon	SINC	Transboundary SINC falling within Merthyr and Caerphilly Boroughs. Wet woodland, marshy grassland and damp neutral grassland along the Nant Mafon. Rich ground flora in woodland areas.	345 m - east

Craig Berthlwyd	SINC	Urban valley side slopewith mosaic habitat of dry heathland, acid grassland (unimproved), bracken and broadleaved woodland.	487 m – north-east
Darren y Celyn	SINC	A large mosaic SINC of conifer plantation and heath on the eastern valley side of the lower Cynon Valley. Includes large areas of dry heath with heather (<i>Calluna vulgaris</i>), bilberry (<i>Vaccinium myrtillus</i>) and wavy-hairgrass (<i>Deschampsia flexuosa</i>) blending with areas of scree and bracken/acid grassland to form extensive areas of open ground heath which will support strong reptile populations.	500 m west
Goetre-coed Wood	SINC	Remnant ancient semi-natural woodland. Small areas of dry heath.	547 m - north-north-west
Mynydd Goetre-Coed	SINC	Hilltop dry heath, acid grassland. Disused quarries. Colliery spoil areas with species rich neutral grassland.	692 m - north-west
Cwm Afon Railway Line, West of Nelson	SINC	A disused railway embankment runs the length of the SINC. Comprising of sheep-grazed semi-improved acid grassland, with patches of rocks and scrub, as well as species-rich marshy grassland. Purple moor-grass (<i>Molinia</i>	659 m – east-south-east

		<i>caerulea</i>) and sharp-flowered rush (<i>Juncus acutiflorus</i>) dominate the wetland habitats.	
Cwm Afon, West of Nelson	SINC	Field of tussocky semi-improved acid and species-rich marshy grassland/flush. Dominant species include purple moor-grass and sharp-flowered rush. Other species include bog pimpernel (<i>Anagallis tenella</i>), marsh violet (<i>Viola palustris</i>) and common cottongrass (<i>Eriophorum angustifolium</i>).	690 m - east
Lower Cynon River	SINC	A wide river marked by a series of long riffle and pool sequences, supporting kingfisher dipper, otter and brown trout. Also includes the wetlands of Pwll Waun Cynon Nature Reserve, as well as the woodlands and pastures of Pontcynon. The nationally scarce flies (<i>Tetantocera punctifrons</i>) and (<i>Sapromyza opaca</i>) have been recorded within the Phurnicite Works part of the SINC.	965 m – west-south-west

3.1.3 Tree Preservation Orders (TPOs) / Ancient Woodland (AW)

A search for records within 100 m of Feeder Pipe Bridge did not identify any TPOs present.

The nearest ancient woodland (AW) site on the south-east side of the bridge was 249 m south-south west of feeder pipe bridge. There was extensive ancient semi-natural woodland (ASNW) located on the north-west side of the bridge, running parallel with the River Taff. Feeder pipe bridge on this side of the river lay within the ASNW. Figure 2 shows the location of ASNW in relation to Feeder Pipe bridge.

Figure 2: ASNW sites (blue) in relation to Feeder Pipe bridge (red). River Taff (grey). The purple dash shows border between Rhondda Cynon Taff County Borough on the north-west side of the river and Merthyr County Borough on the South -east side.

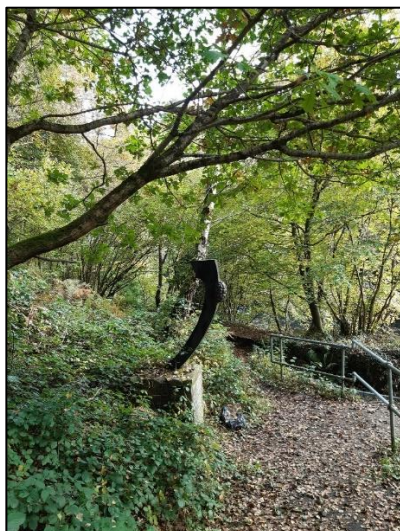


3.1.4 Specific Habitat

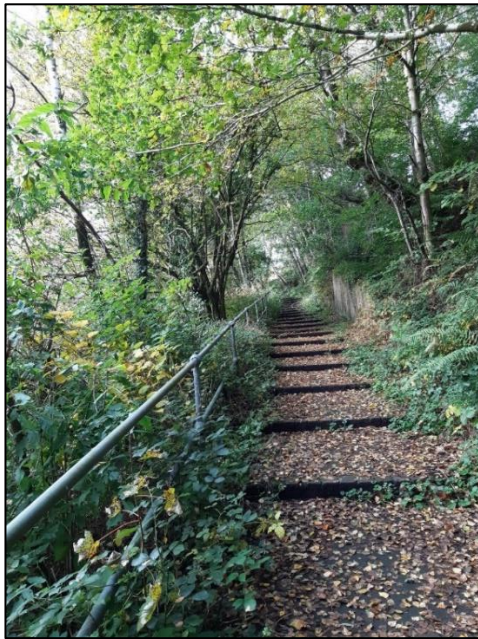
Semi-natural broadleaved woodland

Semi-natural broadleaved woodland was the dominant habitat across the survey area. The habitat was recorded extensively on both sides of the River Taff. Tree species recorded included abundant alder (*Alnus glutinosa*) interspersed with silver birch (*Betula pendula*), hazel (*Corylus avellana*), pedunculate oak (*Quercus robur*), beech (*Fagus sylvatica*), hawthorn (*Crataegus monogyna*) and holly (*Ilex aquifolium*). Trees were generally more mature on the north-west side of the river (including Ancient Woodland) (see photograph 1) with mature to semi-mature specimens present on the south-east. (see photograph 2).

Photograph 1: Semi-natural broadleaved woodland adjacent to the north-west side of the structure



Photograph 2: Semi-natural broadleaved woodland flanking the footpath running between Tram Side Road and the south-east side of the structure. Photograph looking towards Tram Side Road.



Understory vegetation was generally less well developed on the north-west side of the river compared to the south-east as the ground was wetter; springs issuing from the steep slopes were identified. The species composition of the understory was similar across the site with abundant Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and common ivy (*Hedera helix*) present (See photograph 3).

Photograph 3: Japanese knotweed and Himalayan balsam abundant in the understory of woodland on site. Photograph taken at approximate grid reference ST 09242 95470 looking north.



Scattered trees

An area of scattered trees within a stand of bracken was noted just south of the road (Tram Road side) and comprised abundant semi-mature silver birch and rarely occurring willow species (*Salix* sp.).

Bracken

A parcel of continuous bracken (*Pteridium aquilinum*) was recorded on the south-east side of the River Taff, growing between areas of semi-natural broadleaved woodland. (see photograph 4).

Photograph 4: Continuous bracken with scattered silver birch on the south side of Tram Side Road at approximate grid reference ST 09246 95454. Photograph taken looking south-west.



Running water

Running water was represented within the survey area by the River Taff which flowed south - west under Feeder Pipe Bridge (see photograph 5). The river was approximately 20 m wide at the crossing point. The banks on the south-east side of the river were steep sided and formed from natural rock outcrop and engineered stonework which formed part of the Feeder Pipe Bridge original structure.

On the north-west side of the river the banks upstream of the bridge were formed by a stone-built wall and there was a wide stony shoal extending out into the river. Downstream the banks were gently shelving.

Photograph 5: River Taff flowing south -west under piers and iron feeder pipes left in situ following removal of the main bridge.



3.2 Species

Species results combining information from data searches and physical observations during the PEA survey are presented as follows. A full list of protected or priority species and species of conservation concern within a 1 km radius of the site (5 km for bats) is provided in Appendix B.

3.2.1 *European Protected Species*

Bats

There were 227 records for bats returned from the SEWBRc data search within the last 10 years and within a 5 km radius of the site. The majority of records were returned from a 2011 Bats and bikes survey transect along the Taff trail cycle route. Soprano pipistrelle (*Pipistrellus pygmaeus*) accounted for 118 of the records and common pipistrelle (*Pipistrellus pipistrellus*) 75 of the individual records.

The closest bat record to the site was for soprano pipistrelle recorded 59 m east on the Taff Trail: National Cycle route 8.

The nearest recorded bat roost was a common pipistrelle roost 1100 m north-east on Brynherwyn Avenue, Quaker's Yard.

Habitats on site such as the River Taff and semi-natural broadleaved woodland recorded during the survey provided suitable habitat for bats to forage and commute.

An assessment of the existing structure on site (stone-built piers, abutments, redundant feeder pipes and training walls) was carried out during the PEA survey and a **moderate** level of bat roost potential was assigned to the site based on Bat Conservation Trust Good Practice Guidelines (Collins, 2016) based upon the presence of gaps in the feeder pipe, abutments and training walls on both sides of the river.

Otter

The SEWBRc data search returned four records for otter within 1 km of the site within the past 10 years. The nearest record was for fresh spraint 292 m east of Feeder Pipe Bridge close to the River Taff. Records were returned for upstream and downstream of Feeder Pipe Bridge and all records were closely associated with the River Taff.

No evidence for the presence of otter was noted during the survey however habitat on site was suitable for otter to commute, feed, rest and potentially to establish holts. The River Taff is known to support food prey species such as salmon (*Salmo salar*) and brown trout (*Salmo trutta*). The bank side vegetation provided some areas where otter may rest up during daylight hours and a large log pile on the river bank approximately 55 m upstream provided a potential site for a resting holt to be established. The varied river habitat with riffles, deep pools and shoals provided suitable feeding and commuting opportunities.

Hazel Dormouse

No records were returned from the SEWBRc data search for hazel dormouse (*Muscardinus avellanarius*) within 1 km of the site.

Habitat on site was sub-optimal for the presence of dormouse. Although there was relatively good connectivity across the site and along the river corridor the woodland areas on both sides of the river were wet (due to frequent springs issuing into the area) which would not provide suitable hibernation sites and the abundant ground flora species such as Japanese knotweed and Himalayan balsam did not offer suitable food resources to sustain a population.

No evidence for the presence of dormouse, such as opened hazel nuts or disused breeding nests, was recorded during the survey.

Great crested newt

There were no records for great crested newt returned from within a 1 km radius of the site and no potential breeding sites in the form of suitable ponds were present within 2 km of the site, the nearest being over 2 km to the west in Abercynon.

Although terrestrial habitats (woodland) within the site and surrounding area were found to have habitat suitable for great crested newt during the survey, the distance from suitable breeding sites and the presence of substantial barriers to movement (major roads) make it highly unlikely for great crested newt to be present on site. Great crested newt will therefore not be considered further in this report.

3.2.2 *UK Protected/Priority Species*

Badgers

There was one record returned from the data search for badger, recorded in 2021, 133 m east of Feeder Pipe Bridge. The record was for the location of a badger latrine and general signs of activity.

No evidence for the presence of badger such as latrines or regular commuting paths across the site (runs) was recorded during the PEA. Habitats on site had some limited suitability for badger to forage and commute.

Other mammals

There were five records returned from the SEWBRc data search for West European hedgehog. The closest record to the site was 178 m south-west, recorded as roadkill on Tram Road Side which runs parallel to the River Taff. The most recent record was from 2018.

Habitat on site was suitable for West European hedgehog to forage, nest and commute.

Birds

The SEWBRc data search returned 49 individual records for birds within 1 km of the site in the past 10 years. There was a total of 14 records for Schedule 1 species, including five records for kingfisher (*Alcedo atthis*), six records for redwing (*Turdus iliacus*), two records for barn owl (*Tyto alba*) and a single record for common crossbill (*Loxia curvirostra*). The closest record for a Schedule 1 species was for kingfisher, 68 m south-west along the River Taff.

Section 7 Priority species accounted for 35 records of nine species, the closest record being for kestrel (*Falco tinnunculus*), 190 m north-east of the site.

Common woodland bird species were recorded during the PEA, including long-tailed tit (*Aegithalos caudatus*), treecreeper (*Certhia familiaris*), robin (*Erithacus rubecula*) and great spotted woodpecker (*Dendrocopos major*).

Dipper (*Cinclus cinclus*) and grey wagtail (*Motacilla cineria*) were recorded feeding along the River Taff.

Habitats on site including semi-natural broadleaved woodland, bracken and gaps within walls and the remaining bridge structure were suitable for bird species to nest in the breeding season and shelter and feed all year around.

Fish

No protected fish species were returned from the SEWBRc data search, however, protected species such as salmon (*Salmo salar*) and brown trout (*Salmo trutta*) are included in the citation for the River Taff and Rhondda SINC and they are likely to be present within the watercourse.

No fish species were recorded during the survey.

Reptiles

There was a total of six records for reptiles, comprising two species, returned from the data search. Slow worm (*Anguis fragilis*) was recorded on four occasions and adder (*Vipera berus*) twice. The most recent and closest record to the site was for adder, recorded in April 2021 near Treharris, 212 m north-east.

The abundant woodland habitat on site was generally unsuitable for reptile species to be present with the exception of a small clearing along an unofficial footpath which held a large pile of felled timber which could offer suitability for basking and sheltering species such as common lizard (*Zootoca vivipara*) and slow worm (*Anguis fragilis*) (see photograph 6). This area was located at approximate grid reference ST 09135 95474 on the north-west side of the river. The area of bracken on the south-east side of the river had some potential to offer shelter and basking opportunities for common reptile species, including adder.

Photograph 6: Felled timber (stacked) in a clearing -suitable habitat for reptiles to bask, feed and shelter. approximate grid reference ST 09135 95474. Photograph taken looking west.



Amphibians

There was a total of 5 records for amphibians returned from the SEWBrEC data search for two species, common frog (*Rana temporaria*) and common toad (*Bufo bufo*). The closest record to the site was for common toad, 250 m to the north - east.

Habitats on site were sub-optimal for the presence of common amphibian species and there were no waterbodies such as ponds or ditches suitable for breeding sites within the survey area.

Invertebrates

A total of 64 records of 22 species of invertebrate were returned from the SEWBrEC data search. The majority of priority species were section 7 listed moths. The closest record was for white-letter hairstreak (*Satyrion w-album*) butterfly, 194 m south- southwest.

No invertebrate species were recorded during the survey; however, a wide range of common aquatic and terrestrial invertebrates are highly likely to be present in the habitats on site.

Protected Plant Species

Protected plant species were represented in the desk data by bluebell (*Hyacinthoides non-scripta*) with two records, the closest being 283 m south-west of the site.

No protected plant species were recorded on site during the survey and will therefore not be considered further in this report.

Invasive Plant Species

A total of 4 schedule 9 invasive non-native plant species were returned from the data search: Japanese knotweed, Himalayan balsam, entire-leaved cotoneaster (*Cotoneaster integrifolius*) and Spanish bluebell (*Hyacinthoides hispanica*). The closest record to the site was for Japanese knotweed, recorded 283 m from the site along the bank of the River Taff.

Schedule 9 Invasive plant species Japanese knotweed, Himalayan balsam and crocosmia (*Crocosmia pottsii* x *aurea* = *C. x crocosmiiflora*) were recorded on site during the Preliminary Ecological Appraisal. Large stands of Japanese knotweed and Himalayan balsam were recorded on both sides of the River Taff within the survey area including adjacent to the footpath providing access to the bridge on the south -east side and within 1 m of the bridge on the north-west side. Crocosmia was recorded at approximate grid reference ST 09254 95486, growing close to Tram Side Road where it joined the path leading to the south- east access point of the bridge

4. Evaluation of Ecological Features and Potential Impacts

The desk study and field survey revealed the following ecological features of value to nature conservation.

4.1 Designated sites/ habitats

4.1.1 *Non- statutory designated sites*

Two Sites of Interest for Nature Conservation were present within the works site. The Taff and Rhondda Rivers SINC flowed under the remaining river crossing structure and habitat on the north east side of the river lay within the Lower Taff and Edwardsville Woods SINC. Both these SINCs have high ecological value and are classified as Priority habitat in Wales (river and semi-natural broadleaved lowland woodland). The footprint of the works on the north west side of the river fell within an area of ancient semi-natural woodland. There is high potential for both SINCs to be adversely impacted by the works. The river is vulnerable to pollution caused by accidental fuel spills and disturbance of the riverbed during construction works. The woodland areas, including ASNW may be adversely impacted by removal of trees to facilitate access for plant and machinery during construction works and / or accidental root ball damage during works.

All other non -statutory designated sites identified during the desk study are highly unlikely to be impacted by the works due to the relatively minor and localised nature of the works and the spatial and topographic separation of the SINCs from the works site.

4.2 Species

4.2.1 *Bats*

Habitats on site were highly likely to support commuting and foraging bats and there was moderate potential within stone walls, feeder pipes and abutments supporting the now redundant pipework, to provide roosting sites for bats.

If works are carried out on site during the active season there is potential for roosting and foraging bats to be disturbed by construction noise, additional lighting and/or ground vibration. Impact from these activities is likely to be adverse short-term, lasting for the duration of works.

Any remedial work carried out to improve the structural integrity of existing abutments and associated walls may cause any bats roosting within the structure to be disturbed or inadvertently killed.

4.2.2 *Otter*

The River Taff and riparian habitat provided suitable conditions for otter to feed, commute and rest.

As otters are naturally inquisitive it is possible that construction activity may attract them to investigate the site. Impact on otter during work activity is likely to relate to inadvertent harm caused by otter being trapped in uncovered excavations on site. Any additional lighting and /or night- time working is likely to adversely impact on otter by disrupting established feeding and

commuting activity. Likewise, if the river channel is blocked to facilitate works otter may be inhibited or completely excluded from feeding and sheltering areas.

4.2.3 *Hazel dormouse*

As there were no records for dormouse from the data search and habitat on site was sub-optimal for dormouse (lacking suitable food resources or hibernation sites), it is unlikely that dormouse would be present. However, as dormouse is a difficult to detect species, living at low population densities even in optimal habitat, presence cannot be completely discounted. There is low potential for disturbance during de-vegetation works if carried out in the dormouse active season (April to late October) and therefore a precautionary approach to works will be required.

4.2.4 *Badgers*

The site had some potential habitat to support commuting and foraging badger however the generally wet ground conditions and relatively high levels of disturbance, including from off lead dogs, make the site unsuitable for the establishment of setts.

Any adverse impact on badger is likely to relate to an inquisitive animal being accidentally trapped in uncovered excavations on site.

4.2.5 *Other mammals*

There was suitable habitat on site for West European hedgehog to forage, breed, nest and commute. The desk study returned a few records for the species with the closest being within 180 m of the site.

Adverse impact on hedgehog is possible when vegetation clearance is carried out, but no long-term impact on the local hedgehog population is envisaged as a result of the works.

4.2.6 *Birds*

As bird species are highly likely to be present on site throughout the year there is potential for site clearance work and construction activity on and near the river to cause disturbance to nesting birds if works are conducted during the breeding season (March to September inclusive).

Any restriction to access e.g., from scaffolding or netting during bridge construction works has the potential to adversely impact on species such as Schedule 1 kingfisher (*Alcedo atthis*), dipper (*Cinclus cinclus*) and grey wagtail (*Motacilla cinerea*); restricting access to nest sites, breeding territories and food resources.

If works are conducted outside the breeding season the impact due to the temporary loss of a small amount of terrestrial foraging and shelter habitat is considered to be minor adverse as the surrounding environment offers suitable habitat for displaced birds during the relatively short time period when clearance work will be carried out.

The long-term impact on breeding birds as a result of the proposed development is likely to be minor to negligible. There is abundant suitable breeding habitat in the wider landscape for the full range of species recorded on site or likely to be present.

4.2.7 *Fish*

Priority fish species such as brown trout are known to use the river Taff and are likely to be present on site. Proposed works have the potential to disrupt commuting pathways for fish species. Any pollution of the watercourse is likely to have an impact on fish species with severity of impact determined by the nature and extent of the pollution. Any spills of oil, chemicals or fuel are likely to have a high short- term impact on fish species whereas limited disturbance of sediment during works such as demolition of the bridge or repair to scour would be likely to have a low to moderate short- term impact.

4.2.8 *Reptiles*

There was limited optimal habitat for reptiles within the survey area. If reptiles are present it is likely to be in low numbers and limited to the bracken slopes on the south east side of the river and the small clearing with woodpiles on the north west side, neither of these areas are likely to be disturbed as a result of the proposed works.

There is low potential for reptiles to be harmed during habitat clearance activities in sub-optimal habitat for reptiles (scrub and woodland understory) present on both sides of the feeder pipe crossing.

4.2.9 *Amphibians*

The damp woodland and scrub areas on site provided some limited suitability for amphibian species, however, they are unlikely to be present in large numbers owing to the lack of suitable breeding sites in the area.

There is potential for low numbers of common amphibian species to be killed or injured because of vegetation clearance works to facilitate site access.

4.2.10 *Invertebrates*

Disturbance to terrestrial invertebrates is likely to be minor and of short duration, affecting common species only. Records for priority and protected species from the desk study were predominantly for moth species which are present in commonly occurring habitats and have generalist feeding requirements at the larval stage. Moth species are unlikely to be adversely impacted other than at a site level in the short term as suitable habitat for a wide range of species was available in the wider landscape.

Aquatic invertebrates may be impacted adversely in the short to medium term through construction activities causing silting of the water and/ or pollution events.

4.2.11 *Invasive plant species*

Invasive plant species were recorded in abundance across the site including Schedule 9 species Himalayan balsam and Japanese knotweed. Vegetation clearance during the pre-construction phase is highly likely to cause disturbance and potentially the spread of these species which constitutes an illegal action. As Japanese knotweed was growing within 1 m of the Feeder pipe river crossing it is highly likely that this species will be disturbed as a result of the works and may be spread from site through material entering the river.

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”.

5. Conclusion

5.1 Habitats

The River Taff had high ecological value, being listed as a priority habitat in Wales and designated as a SINC. It is highly likely to support a range of protected species such as otter, brown trout, salmon and Schedule 1 bird species kingfisher (*Alcedo atthis*).

The area of woodland on the north west side of the river (part of the Lower Taff and Edwardsville SINC), within the footprint of the proposed works, forms part of an ancient semi-natural woodland (ASNW) which is of high ecological value. The ASNW is classified as priority habitat under section 7 of the Environment (Wales) Act 2016 and is therefore of "Principal Importance" for the purpose of maintain and enhancing biodiversity in relation to Wales. Woodland habitat on site is highly likely to support a range of bird species, terrestrial invertebrates and provide suitable habitat for species such as badger and hedgehog to forage and commute.

The woodland and river habitats in combination provide an important wildlife corridor within Rhondda Cynon Taf.

5.2 Species

The survey area as a whole had high ecological value for a range of priority and protected species. Bat species are highly likely to use the river corridor to commute and feed and terrestrial habitat on site such as woodland will provide suitable habitat for foraging.

There were features within the remaining river crossing structure and associated training walls with suitability for roosting bats.

Otters are highly likely to be present on the river and may use riparian habitat to rest and establish holts.

Schedule 1 bird species kingfisher is highly likely to use the river corridor to feed, provision young and commute.

Other areas such as the woodland provided good habitat for common bird species to feed, shelter and nest.

Habitat suitable for hedgehog was extensively present across the site.

There was moderate ecological value in habitats on site to potentially support badger, dormouse and reptile and amphibian species.

Invasive non- native plant species were recorded across the site and it is likely that they would be disturbed during works.

Adopting the mitigation recommendations detailed in section 6 will ensure that the works on site are compliant with wildlife law.

It will be necessary to adopt compensation and enhancement measures recommended in section 6 to ensure that in the long- term biodiversity of the site is enhanced in line with the Environment (Wales) Act 2016 and Planning Policy Wales 11 (2021).

6. Recommendations for further survey, mitigation and enhancement

6.1 Further Survey

6.1.1 Otter

An otter survey should be carried out 250 m upstream and downstream of Feeder Pipe Bridge to determine current activity and whether any otter holts are present within 30 m of the proposed works.

6.1.2 Bats

One dusk emergence survey and a separate dawn return to roost survey should be carried out to determine whether the crossing and associated structures are used by roosting bats.

6.2 Mitigation

6.2.1 Priority habitats

Damage or destruction of high value habitat such as ancient semi-natural woodland should be avoided in the first instance and at least kept to the minimum required to effectively implement the scheme. Any loss of woodland plants should be replaced on a like for like basis.

Construction methods, plant and machinery, access routes and siting of compounds / welfare facilities should be discussed with an ecologist to ensure that damage to priority habitat is minimised.

Pollution prevention measures as outlined in section 6.2.11 should be adopted to ensure the river is protected. Construction methods should be adopted which minimise disturbance to the riverbed and / or alter the structure of the watercourse.

6.2.2 Bats

General bat mitigation

Dependent upon the results of the bat emergence/return to roost surveys, the following measures should be employed to reduce disturbance to bats utilising suitable habitat on site.

- If the proposed works are carried out during the time of year when bats are active (i.e., April to September inclusive), works should be carried out during daylight hours; commencing at least 1 hour following sunrise and finishing at least 1 hour before sunset, to avoid unnecessary disturbance to bats.
- If night- time working is unavoidable then advice on how to reduce potential disturbance to bats should be sought from a suitably qualified ecologist.
- An open flight pathway should be left on the River Taff at night to allow commuting and foraging bats to move freely.
- If additional lighting is required for safety, any light sources used should be directional and positioned to prevent excessive light spill from the immediate works area.

6.2.3 *Otter*

Dependent upon the results of the otter survey, general otter mitigation measures should be in place, including:

- The site compound (and all machines and materials) should be located away from watercourses. A suitable location for the compound should be agreed with an ecologist to ensure that this doesn't conflict with other ecological considerations.
- Materials and machinery should be locked away in the site compound when not in use, day, night or weekend. Where this is not possible, they will need to be fenced off.
- Working within 30 m of a waterbody should be restricted to starting one hour after sunrise and completing one hour before sunset. This should allow otters using the waterbody to carry out their normal nocturnal activities.
- Any excavations should be securely fenced off and covered over at the end of the working period, at weekends or when not in use. If it is not possible to cover excavations an escape ramp should be installed to limit the possibility of otters becoming trapped.
- The use of external lighting should be kept to a minimum to reduce any potential disturbance to otters. If temporary lighting during construction is required for health and safety or security the layout and specification should be discussed with and agreed by an ecologist – directional lighting and screening may be required.

In the unlikely event of a holt being discovered during construction, a work exclusion zone of 30m must be established immediately and Natural Resources Wales contacted for advice before works recommence.

6.2.4 *Dormouse*

A dormouse Method Statement should be in place detailing the method and timing of vegetation clearance works. Work should ideally be carried out in the dormouse active period between April and late October. Despite there being low potential for dormouse to be present this precautionary approach should be adopted to minimise the risk of causing harm to dormouse or destroying nest sites.

6.2.5 *Badger*

In the unlikely event that a badger sett is discovered during works all work should stop within 30 m of the sett and advice obtained from an ecologist or Natural Resources Wales.

6.2.6 *Amphibians and reptiles*

A combined reptile and amphibian method statement should be in place detailing the method and timing of site clearance works designed to minimise the risk of harm.

All vegetation clearance should be undertaken under the supervision of an Ecological Clerk of Works (ECoW). Vegetation clearance should ideally be carried out when reptiles are active (April to September, inclusive).

6.2.7 *Hedgehog*

Any vegetation clearance should be undertaken carefully and methodically, working in one direction using hand tools only.

If a hedgehog is found on site, it may be moved to a place of safety away from the construction zone within semi-natural broadleaved woodland. If a mother and hoglets are found on site and disturbance is unavoidable, a wildlife rehabilitator should be contacted as the adult female may abandon the nest and juveniles may not survive independently of her. This is particularly important for late autumn young.

The clearance methods for hedgehog are applicable to amphibians and reptiles and therefore a combined method statement should be produced.

6.2.8 *Other mammals*

All plant and machinery should remain within pre-determined routes that have been cleared of vegetation under ecological supervision to avoid crushing and/or asphyxiation of burrowing mammals by plant and machinery.

6.2.9 *Birds*

Any vegetation or tree clearance should be undertaken outside the bird breeding season (i.e. work conducted during September to February inclusive). If this is not possible, the work should be carried out carefully following a check by an ecologist for active bird nests immediately prior to the work commencing. If an active nest is discovered, all works in the immediate area should cease and the nest protected until the young have fledged and / or the nest is no longer active.

6.2.10 *Operational activities*

Plant and machinery should ideally be sited on areas of existing hardstanding near the works site unless protected species are known to be present.

Siting of plant and machinery should be discussed with an ecologist prior to commencement of works. (See section 6.2.8).

If any vegetation removal or disturbance of natural ground is required, the area should be checked by an ecologist for protected species prior to contractors arriving on site and /or any relevant method statement followed.

Any excavation should be covered overnight or when not in use or fitted with a ramp as a means of escape to prevent animals becoming trapped.

6.2.11 *Pollution prevention measures*

Suitable pollution prevention measures, forming part of a Construction Environmental Management Plan (CEMP) should be employed to all works to avoid pollution of the river Taff. Current best practice guidelines regarding working in or near water (NetRegs, 2018) should be consulted when producing the CEMP.

To avoid polluting the river during the works the following recommendations should be followed.

- All materials (especially if hazardous or toxic) should be stored at least 7m away from the watercourse.
- All static machinery should be placed on drip-trays or oil absorbent nappies. Trays should be emptied regularly to ensure that they contain any spills.

6.2.12 *Invasive plant species*

The appointed contractors should provide an appropriate Invasive Species Method Statement for the proposed works that should be followed for the duration of the works, to minimise the risk of spreading invasive plant species recorded on site. The risk of spreading invasive plant species can be reduced by avoiding unnecessary disturbance (e.g., siting of plant/tools/ machinery) in areas where Schedule 9 species are present.

6.2.13 *Toolbox talk*

All site operatives should receive an ecological toolbox talk prior to commencement of works. The toolbox talk should 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 management plan for invasive species should be included.

6.3 Enhancement Opportunities

The following enhancement measures are recommended to comply with The Environment (Wales) Act 2016 and Planning Policy Wales (11th Ed. 2021):

6.3.1 *Bats*

Three 'summer roost' crevice bat boxes could be installed, under guidance of an ecologist, on mature trees within the adjacent woodland. These should be sited facing south, south-east and south-west to give a range of temperatures throughout the season. A recommended make and model is Treble or Double Crevice; NHBS reference #187784/ #187782; available at: <https://www.nhbs.com/improvedcrevice-bat-box>.

6.3.2 *Birds*

At least three bird boxes for small passerines such as blue tit could be installed, under guidance of an ecologist, approximately 3-4 m high within the woodland, adjacent to the river. These should be installed facing between a northerly and eastern direction.

A recommended make and model for installation is Apex Bird Box 28 mm entrance hole; NHBS reference #233975; available at: <https://www.nhbs.com/apex-bird-box>.

6.3.3 *Reptiles*

Grass cuttings and brash from the vegetation clearance work could be used to create reptile hibernacula adjacent to areas being cleared for site access. Reptile hibernacula can be composed of brash and log piles created from cleared trees or scrub cuttings placed in suitable sunny areas.

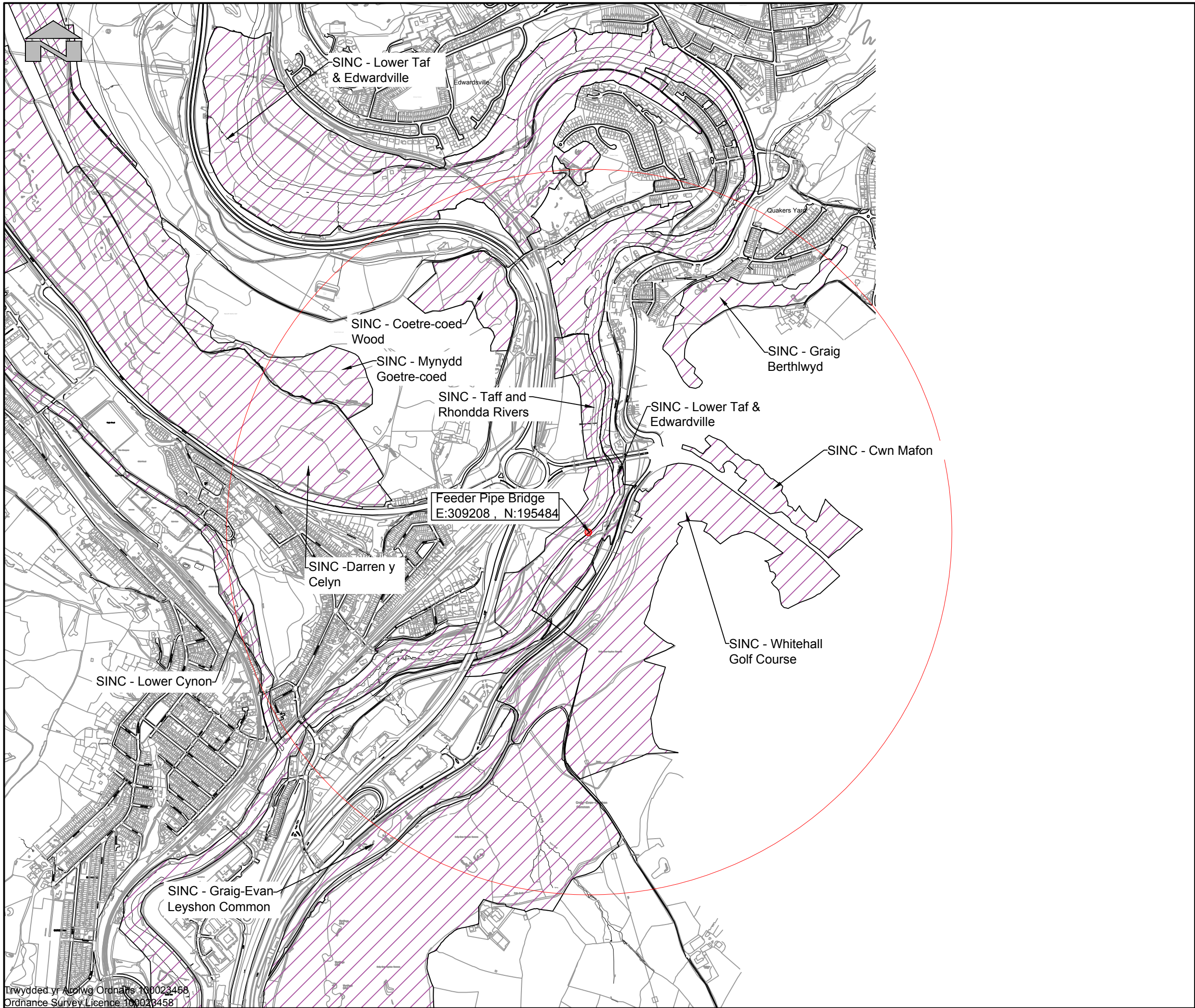
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Drawings

GC3880-RED-74-XX-DR-L-0003-Phase 1 Habitat Map

GC3880-RED-74-XX-DR-L-0002-Feeder Pipe Bridge -Designated Sites Map



1km Radius

Sites of Importance for Nature Conservation

Rev	Drawn	Chkd	App'd	Description	Date
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Purpose of Issue
S2 - Suitable for Information

Classification
Confidential

Client
Rhondda Cynon Taf
County Borough Council

Project
Feeder Pipe Bridge Abercynon

Drawing
Designated sites map

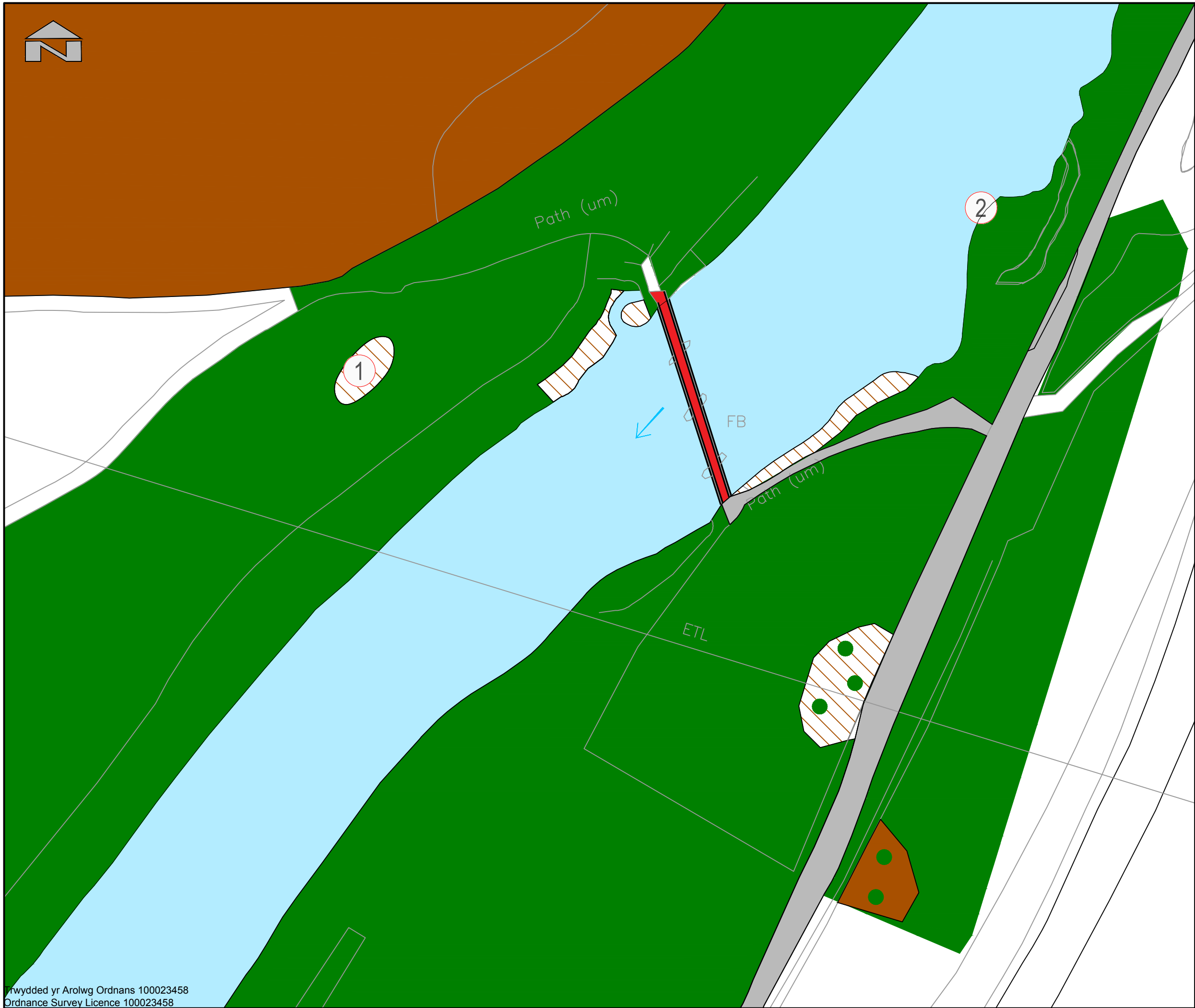
Scale @ A3	Drawn	Checked	Approved
As Shown	EM	JB	GP

Project No.	Date
GC/003880	July 2021

Drawing Identifier	BS1192 Compliant
Project - Originator - Zone - Level - File Type - Role - Number	rev
GC3880-RED-74-XX-DR-L-0002	P01



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-  Semi - natural broadleaved woodland
-  Scattered trees
-  Bracken
-  Tall ruderal
-  Hardstanding
-  Target notes

Rev	Dwn	Chkd	App'd	Description	Date
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Purpose of Issue

S2 - Suitable for Information

Classification

Confidential

Client

Rhondda Cynon Taf
County Borough Council

Project

Feeder Pipe
Optioneering Study

Drawing

Feeder Pipe Bridge
Phase 1 Habitat Map

Scale @ A3	Drawn	Checked	Approved
As Shown	EM	JB	GP

Project No.	Date
GC/003880	June 2021

Drawing Identifier	BS1192 Compliant
Project - Originator - Zone - Level - File Type - Role - Number	rev
GC3880-RED-74-XX-DR-L-0003	P01



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Appendix A – Legislation

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; and
- damage or destruction of a breeding site or resting place of such an animal.

Where a European protected species is present, a development 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”.

Wild Mammals (Protection) Act 1996

Provides protection for wild mammals against certain acts of deliberate harm including crushing and asphyxiation.

Wild mammal means any mammal which is not a ‘protected animal’ within the meaning of the Animal Welfare Act 2006 (Schedule 3, Section 13). Hedgehog would be included under this definition.

Environment (Wales) Act 2016

Section 7 of the Environment (Wales) Act has replaced the Section 42 of the NERC Act 2006 in Wales. 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 hectares 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 1 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, S7, LBAP (ANG, DEN, FLI, RCT, SNP, TRA, TRF)	12	June 2020
Brown long-eared bat	<i>Plecotus auritus</i>	EPS, HDir, WCA5, S7, UKBAP, Bonn, Bern, RD2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)	14	August 2020
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	EPS, HDir, WCA5, S7, Bonn, Bern, LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG)	75	February 2021
Daubenton's bat	<i>Myotis daubentonii</i>	Bern, EPS, HDir, RD2(UK), WCA5, LBAP[ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF]	5	2019
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	EPS, HDir, WCA5, S7, UKBAP, Bonn, Bern, RD2 (UK), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, MON, PEM, POW, SNP, TRA, TRF, VOG, WRE)	1	August 2012
Lesser noctule	<i>Nyctalus leisleri</i>	EPS, HDir, WCA5, Bonn, Bern, RD2 (UK), LBAP (ANG, DEN, FLI, SNP, TRA, TRF)	1	January 2020
Nathusius's pipistrelle	<i>Pipistrellus nathusii</i>	EPS, HDir, WCA5, Bonn, Bern, RD2 (UK), LBAP (ANG, DEN, FLI, SNP, TRA, TRF)	3	July 2019
Natterer's bat	<i>Myotis nattereri</i>	EPS, HDir, WCA5, Bonn, Bern, RD2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF)	1	May 2013
Noctule bat	<i>Nyctalus noctula</i>	EPS, HDir, WCA5, S7, UKBAP, Bonn, Bern, RD2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)	15	October 2020

Pipistrelle	<i>Pipistrellus pipistrellus agg.</i>	EPS, HDir, WCA5, S7, Bonn, Bern, RD2 (UK), LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG)	20	February 2021
Serotine	<i>Eptesicus serotinus</i>	EPS, HDir, WCA5, Bonn, Bern, RD2 (UK), LBAP (GWY, POW, TRA, TRF)	1	May 2017
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	EPS, HDir, WCA5, S7, UKBAP, Bonn, Bern, RD2 (UK), LBAP (ANG, BBNP, CLY, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG)	118	February 2021
Unidentified bat	<i>Myotis</i>	EPS, HDir, WCA5, Bonn, Bern, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)	9	May 2020
Whiskered bat	<i>Myotis mystacinus</i>	Bern, EPS, HDir, RD2(UK), WCA5, LBAP[ANG, DEN, FLI, GWY, POW, SNP, TRA, TRF]	2	2011

Nearest bat records from grid reference ST 09208 95484

Soprano pipistrelle 59 m east Taff Trail: National Route 8

Nearest bat roost Common pipistrelle 1100 m north-east Brynherwyn Avenue: Quaker's Yard

Protected and Priority Species within 2km (Excluding bats)				
Common Name	Scientific Name	Legislation / Conservation Status	Number of Records	Most Recent Record
Amphibians				
Common frog	<i>Rana temporaria</i>	Bern, HDir, WCA5, LBAP[ANG, CLY, CON, FLI, POW, TRA]	1	July 2020
Common toad	<i>Bufo bufo</i>	Bern, S7, WCA5, LBAP[ANG, CLY, CON, DEN, FLI, GWY, POW, TRA, VOG]	4	April 2021
Birds				
Common reed bunting	<i>Emberiza schoeniclus</i>	Bern, S7, UKBA, WBA, LBAP[BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG]	1	January 2011
Cuckoo	<i>Cuculus canorus</i>	S7, UKBAP, WBR(RSPB), LBAP (CON, DEN, FLI, GWY, VOG), UKBR(RSPB), UKBAm(RSPB)	3	June 2013
Dunnock	<i>Prunella modularis</i>	S7, UKBAP, Bern, LBAP (CON, POW, VOG), UKBAm(RSPB)	8	January 2021
Eurasian bullfinch	<i>Pyrrhula pyrrhula</i>	S7, UKBA, WBR, LBAP[BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, TRF, VOG]	6	January 2021
House sparrow	<i>Passer domesticus</i>	S7, UKBR, WBA, LBAP[CLY, CON, FLI, GWY, VOG]	4	January 2021
Kestrel	<i>Falco tinnunculus</i>	S7, Bonn, Bern, CITES, WBR(RSPB), LBAP (ANG, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), LI(VC43), UKBAm(RSPB)	1	October 2021
Kingfisher	<i>Alcedo atthis</i>	BDir1, WCA1.1, Bern, LBAP (CLY, CON, DEN, FLI, GWY, POW, TRA), WBAm(RSPB), UKBAm(RSPB)	5	November 2020
Linnet	<i>Linaria cannabina</i>	S7, Bern, WBR(RSPB), LBAP (ANG, BBNP, CER, CLY, DEN, FLI, PEM, VOG), LBAP (CON, GWY), UKBR(RSPB)	3	March 2020
Red crossbill	<i>Loxia curvirostra</i>	Bern, WCA1.1, LBAP[CON, POW], LI[VC43]	1	April 2011
Redwing	<i>Turdus iliacus</i>	BDir22, WCA1.1, LBAP (CON, POW), WBAm(RSPB), UKBR(RSPB), UKBAm(RSPB)	6	2021

Song thrush	<i>Turdus philomelos</i>	BDir22, S7, UKBAP, Bern, LBAP (ANG, BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG, WRE), WBAm(RSPB), UKBR(RSPB)	6	January 2021
Starling	<i>Sturnus vulgaris</i>	BDir22, S7, UKBAP, Bern, WBR(RSPB), LBAP (BBNP, CON, FLI, GWY, VOG), UKBR(RSPB)	3	January 2021
Western barn owl	<i>Tyto alba</i>	Bern, CITES, WCA1.1, WCA9, LBAP[ANG, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, VOG, WRE], LI[VC43]	2	May 2020
Invertebrates				
August thorn	<i>Ennomos quercinaria</i>	S7, LBAP[GWY, VOG], LI[BIS]	2	2020
Brindled beauty	<i>Lycia hirtaria</i>	S7, LBAP[GWY, VOG]	2	2021
Buff ermine	<i>Spilosoma lutea</i>	S7, LBAP[GWY, VOG]	5	June 2020
Centre-barred sallow	<i>Atethmia centrago</i>	S7, LBAP[GWY, VOG]	9	2020
Cinnabar	<i>Tyria jacobaeae</i>	S7, LBAP[GWY, VOG]	4	June 2020
Dot moth	<i>Melanchra persicariae</i>	S7, LBAP[GWY, VOG]	1	July 2020
Dusky thorn	<i>Ennomos fuscantaria</i>	S7, LBAP[GWY, VOG]	11	2020
Ear moth	<i>Amphipoea oculea</i>	S7, LBAP[GWY, VOG]	1	July 2020
Flounced chestnut	<i>Agrochola helvola</i>	S7, LBAP[GWY, VOG]	2	2020
Garden tiger	<i>Arctia caja</i>	S7, LBAP[GWY, VOG]	1	July 2020
Hedge rustic	<i>Tholera cespitis</i>	S7, LBAP[GWY, VOG]	2	2020
Knot grass	<i>Acronicta rumicis</i>	S7, LBAP[GWY, VOG]	2	June 2020
Rosy rustic	<i>Hydraecia micacea</i>	S7, LBAP[GWY, VOG]	2	2020
Rustic	<i>Hoplodrina blanda</i>	S7, LBAP[GWY, VOG]	3	July 2020
Sallow	<i>Cirrhia icteritia</i>	S7, LBAP[GWY, VOG]	2	2020
Shoulder-striped wainscot	<i>Leucania comma</i>	S7, LBAP[GWY, VOG]	2	June 2020

Small heath	<i>Coenonympha pamphilus</i>	RD1(UK)NT, S7, LBAP[GWY, VOG]	1	May 2017
Small phoenix	<i>Ecliptopera silaceata</i>	S7, LBAP[GWY, VOG]	2	August 2020
Small square-spot	<i>Diarsia rubi</i>	S7, LBAP[GWY, VOG]	7	2020
Streak	<i>Chesias legatella</i>	S7	1	October 2020
White ermine	<i>Spilosoma lubricipeda</i>	S7, LBAP[GWY, VOG]	1	June 2020
White-letter hairstreak	<i>Satyrrium w-album</i>	RD1(UK)EN, S7, WCA5, LBAP[BRG, FLI, NEW, SWN, VOG], LI[SEWBReC]	1	July 2016
Mammals				
Eurasian badger	<i>Meles meles</i>	BA, Bern, LBAP (CLY, CON, DEN, FLI, PEM, POW, TRF, WRE)	1	February 2021
European otter	<i>Lutra lutra</i>	EPS, HDir, WCA5, S7, UKBAP, Bern, CITES, RD1 (UK), RD2 (UK), LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, TRF, VOG, WRE)	4	November 2020
Polecat	<i>Mustela putorius</i>	HDir, S7, UKBAP, Bern, RD2 (UK), LBAP (BGW, BRG, CON, FLI, GWY, NEW, POW, SNP, VOG)	1	January 2013
West European hedgehog	<i>Erinaceus europaeus</i>	S7, UKBAP, Bern, LBAP (ANG, BGW, BRG, CON, FLI, GWY, NEW, POW, RCT, VOG)	5	May 2018
Plants				
Bluebell	<i>Hyacinthoides non-scripta</i>	WCA8, LBAP (ANG, CLY, CON, FLI, SNP, TRA, TRF)	2	April 2020
Reptiles				
Adder	<i>Vipera berus</i>	WCA5, S7, UKBAP, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)	2	April 2021
Slow-worm	<i>Anguis fragilis</i>	WCA5, S7, UKBAP, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, VOG)	4	May 2020

Species of Conservation Concern within 2 km				
Common Name	Scientific Name	Legislation / Conservation Status	Number of Records	Most Recent Record
Birds				
Common sandpiper	<i>Actitis hypoleucos</i>	Bonn, Bern, WBAm(RSPB)	1	June 2020
Cormorant	<i>Phalacrocorax carbo</i>	Bonn, LBAP (CON, GWY, POW), WBAm(RSPB), UKBAm(RSPB)	2	January 2021
Dipper	<i>Cinclus cinclus</i>	Bern, LBAP (BRG, CLY, CON, MTR, POW, RCT, TRA), WBAm(RSPB), UKBAm(RSPB)	1	February 2020
European green woodpecker	<i>Picus viridis</i>	Bern, LBAP (CLY, CON, DEN, FLI, GWY, PEM, POW, SNP), WBAm(RSPB), UKBAm(RSPB)	1	March 2020
Goldcrest	<i>Regulus regulus</i>	Bern, LBAP (CON, POW), WBAm(RSPB), UKBAm(RSPB)	3	2020
Grey heron	<i>Ardea cinerea</i>	WBA, LBAP[BRG, RCT]	3	January 2021
Grey wagtail	<i>Motacilla cinerea</i>	Bern, UKBR, WBA, LBAP[CLY, CON, POW, TRA]	1	March 2020
Lesser black-backed gull	<i>Larus fuscus</i>	BDir22, Bonn, Bern, LBAP (CON, GWY, PEM, POW, SNP), WBAm(RSPB), UKBAm(RSPB)	3	January 2021
Long-tailed tit	<i>Aegithalos caudatus</i>	WBAm(RSPB)	9	January 2021
Mallard	<i>Anas platyrhynchos</i>	BDir21, Bonn, LBAP (CON, GWY), WBAm(RSPB), UKBAm(RSPB)	3	February 2020
Meadow pipit	<i>Anthus pratensis</i>	Bern, LBAP (CON), WBAm(RSPB), UKBAm(RSPB)	3	2015
Mistle thrush	<i>Turdus viscivorus</i>	BDir2.2, Bern, UKBR, WBA	2	January 2021
Sand martin	<i>Riparia riparia</i>	Bern, LBAP (CON, DEN, FLI, GWY, POW, VOG), WBAm(RSPB), UKBAm(RSPB)	8	2015
Swallow	<i>Hirundo rustica</i>	Bern, LBAP (ANG, CON, GWY, POW, VOG), WBAm(RSPB), UKBAm(RSPB)	1	September 2012
Swift	<i>Apus apus</i>	LBAP (BRG, RCT, VOG), WBAm(RSPB), UKBAm(RSPB)	2	May 2020

Wheatear	<i>Oenanthe oenanthe</i>	Bern, LBAP (BRG, CON, POW), WBAm(RSPB)	1	March 2020
Willow warbler	<i>Phylloscopus trochilus</i>	WBR(RSPB), LBAP (CON), UKBAm(RSPB)	5	2020
Woodcock	<i>Scolopax rusticola</i>	BDir21, Bonn, LBAP (CON, DEN, FLI, GWY, POW), WBAm(RSPB), LI(VC43), UKBR(RSPB), UKBAm(RSPB)	1	February 2015
Invertebrates				
Black-headed cardinal beetle	<i>Pyrochroa coccinea</i>	RD2 (UK)	1	June 2013
<i>Caenopsis fissirostris</i>	<i>Caenopsis fissirostris</i>	RD2(UK)NB	1	October 2020
<i>Euphranta toxoneura</i>	<i>Euphranta toxoneura</i>	RD2(UK)NB	1	May 2020
Northern grey	<i>Scoparia ancipitella</i>	RD2(UK)NB	1	July 2020
Pied grey	<i>Eudonia delunella</i>	RD2(UK)NB	2	July 2020
Psylliodes cuprea	<i>Psylliodes cuprea</i>	RD2(UK)S	2	2020
Plants				
Rock stonecrop	<i>Sedum forsterianum</i>	RD2(UK)S, LBAP[CON], LI[LR, LS, SEWBRcC, VC43, VC47, VC49, VC50, VC51]	1	June 2020
Spreading hedge-parsley	<i>Torilis arvensis</i>	RD1(UK)EN, RD1(Wales)RE, RD2(UK)S, LBAP[CON], LI[LR, VC51]	2	July 2018
Welsh poppy	<i>Meconopsis cambrica</i>	RD2(UK)S, LBAP[CON, DEN, NPT], LI[LS, VC43, VC48, VC49]	1	April 2018

Legislation: Abbreviations			
BAP	UK Biodiversity Action Plan	UKBA	RSPB UK Birds Amber List (not based on IUCN criteria)
BDir1	EU Birds Directive Annexe 1	UKBR	RSPB UK Birds Red List (not based on IUCN criteria)
BDir2.1	EU Birds Directive Annexe 2.1	WBA	RSPB Welsh Birds Amber List (not based on IUCN criteria)
BDir2.2	EU Birds Directive Annexe 2.2	WBR	RSPB Welsh Birds Red List (not based on IUCN criteria)
Bern	Bern Convention on the Conservation of European Wildlife and Natural Habitats	WCA1.1	Wildlife & Countryside Act 1981 Schedule 1.1 (Birds which are protected at all times)
Bonn	Bonn Convention on the Conservation of Migratory Species of Wild Animals	WCA1.2	Wildlife & Countryside Act 1981 Schedule 1.2 (Birds which are protected at certain times)

CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora	WCA5	Wildlife & Countryside Act 1981 Schedule 5 (Animals which are protected from killing and taking, possession, disturbance and sale)
EPS	European Protected Species	WCA8	Wildlife & Countryside Act 1981 Schedule 8 (Plants which are protected)
HDir	EU Habitats Directive	WCA9	Wildlife & Countryside Act 1981 Schedule 9 (Non-native animals and plants which are established in the wild)
INNS	Invasive Non-native Species	WVP	IUCN Threat Listing of Welsh Vascular Plants
LBAP	Local Biodiversity Action Plan species for the listed area	LI (SEWBReC)	Locally Important Species (as identified by local specialists) in SEWBReC area.
LI	Locally Important within the listed area	LI (BRYO-MON)	Locally or nationally scarce or rare bryophyte in Monmouthshire.
LBAP [NEW]	Newport City Council Local Biodiversity Action Plan	LI (VC##)	Locally Important Species (as identified by local specialists) in Vice County ##
NRW	Natural Resources Wales Priority Species	LI (VC##, LS)	Locally Scarce in Vice County ##
PBA	Protection of Badgers Act 1992	LI (VC##, LR)	Locally Rare in Vice County ##
RD1(UK)	Red Data Book listing for the UK based on IUCN guidelines (CE= Critically Endangered, EN= Endangered, VU= Vulnerable, NT= Near Threatened, LC=Least Concern)	LI (VC##, EX)	Extinct in Vice County ##
RD1 (Wales)	Red Data Book listing for Wales based on IUCN guidelines	LI (VC##, UR)	Under Recorded in Vice County ##
RD2(UK)	Red Data Book listing for the UK not based on IUCN guidelines	##	Vice County number. For more information on Vice Counties visit: https://www.ukbutterflies.co.uk/webpage.php?name=site_terms
S7	Environment (Wales) Act 2016 (Section 7)		

Appendix C- Target Notes

Target Note (TN) number		Description	Photograph
1		Stacked logs within a clearing in woodland at ST 09135 95474 suitable for reptiles to shelter, bask and feed.	
2		Log pile on south east riverbank at approximate 55 m upstream of remaining bridge structure with some suitability for otter to establish holts.	

Appendix D-Botanical Species List

Common Name	Scientific Name	ACFOR (LA-Locally abundant)
1. Semi-natural broadleaved woodland		
Alder	<i>Alnus glutinosa</i>	A
Pedunculate oak	<i>Quercus robur</i>	C
Silver birch	<i>Betula pendula</i>	C
Ash	<i>Fraxinus excelsior</i>	O
Hazel	<i>Corylus avellana</i>	O
Beech	<i>Fagus sylvatica</i>	O
Holly	<i>Ilex aquifolium</i>	O
Willow species	<i>Salix</i> sp.	O
<i>Understory species</i>		
Japanese knotweed	<i>Fallopia japonica</i>	A
Himalayan balsam	<i>Impatiens glandulifera</i>	A
Common ivy	<i>Hedera helix</i>	A
Bramble	<i>Rubus fruticosus</i> agg.	C
Common nettle	<i>Urtica dioecia</i>	O
Hart's tongue	<i>Asplenium scolopendrium</i>	O
Wood avens	<i>Geum urbanum</i>	O
Herb robert	<i>Geranium robertianum</i>	O
Traveller's joy	<i>Clematis vitalba</i>	R
2. Scattered trees		
Silver birch	<i>Betula pendula</i>	A
Willow Species	<i>Salix</i> sp.	R
3. Bracken		
Bracken	<i>Pteridium aquilinum</i>	A

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