ISSUING OFFICE:
The Lodge
Caerphilly Business Park
Van Road
Caerphilly
CF83 3GG

T: 029 2002 2320

E: info@wildwoodecology.com
W: www.wildwoodecology.com

PRELIMINARY ECOLOGICAL APPRAISAL

PROPOSED RHONDDA FACH CYCLE ROUTE

SUSTRANS

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Director: Richard Dodd, BSc (Hons), CEcol, MCIEEM
Wildwood Ecology Limited. Registered in England & Wales, Company No. 6646654 VAT No. 938019610
Registered Office: Queen Anne House, 66 Cricklade Street, Cirencester, Gloucestershire, GL7 1JN

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VERSIONING AND QUALITY ASSURANCE

Rev	Status	Date	Author(s)	Reviewed by	Approved by
A	Draft	28/01/2019	Alex Pollard MCIEEM Principal Ecologist		Alex Pollard MCIEEM Principle Ecologist
B	Draft	11/07/2019	Alex Pollard MCIEEM Principal Ecologist		Alex Pollard MCIEEM Principal Ecologist
	FINAL	03/12/2019			Alex Wilson MCIEEM Principal Ecologist

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The evidence which we have prepared and provided is true, and has been prepared and provided in accordance with the guidance of The Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

SUMMARY

Purpose	• Wildwood Ecology was commissioned by Sustrans (the client) to undertake a Preliminary Ecological Appraisal (PEA) of the Proposed Rhondda Fach Cycle Route • The site is the subject of a proposal to implement a new cycleway, requiring a feasibility study and ecological screening.
Work undertaken	• A PEA was undertaken consisting of a desk study and field survey undertaken in January, March and April 2019 following the Chartered Institute of Ecology and Environmental Management (CIEEM) Preliminary Ecological Appraisal (2013) guidelines and standard Phase 1 Habitat Survey protocol (JNCC, 2010).

Key issues	• The development may result in impacts on the following:
	  • Nesting birds
	  • Bats
	  • Otter
	  • Reptiles
	  • Amphibians
	  • Invertebrates
	  • Non-statutory designated sites

Recommendations	• Recommendations are provided to mitigate the potential impacts to priority and protected species and habitats. • These include avoidance of vegetation removal in the nesting bird season; sensitive vegetation removal with respect to reptiles; no night lighting of trees, scrub and watercourses; any trenches/excavations to include a means of escape for animals; management strategy to compensate for loss of priority habitats onsite; pollution control measures to be in place during construction. • Biodiversity enhancement measures are also provided.
Conclusions	• The full ecological impacts of the proposed development have been fully assessed following the PEA and, providing the recommendations are carried out, the proposal is likely to have a net benefit for biodiversity. • This ecological report will remain valid for a period of 18 months from the date of the last survey – i.e. until October 2020.

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1 INTRODUCTION

1.1 Wildwood Ecology was commissioned by Sustrans (the client) to undertake a preliminary ecological appraisal (PEA) of Proposed Rhondda Fach Cycle Route (the site) centred at grid reference SS997972.

Site description

1.2 The aerial image of the site (Figure 1) shows the site to consist of linear pathways and disused railway line, bounded by settlement edges (buildings and gardens), hedgerows, agricultural land, scrub and woodland.

1.3 The settlements present in the vicinity (north to south) are Maerdy, Ferndale and Tylorstown. All of which are within Rhondda Cynon Taff.

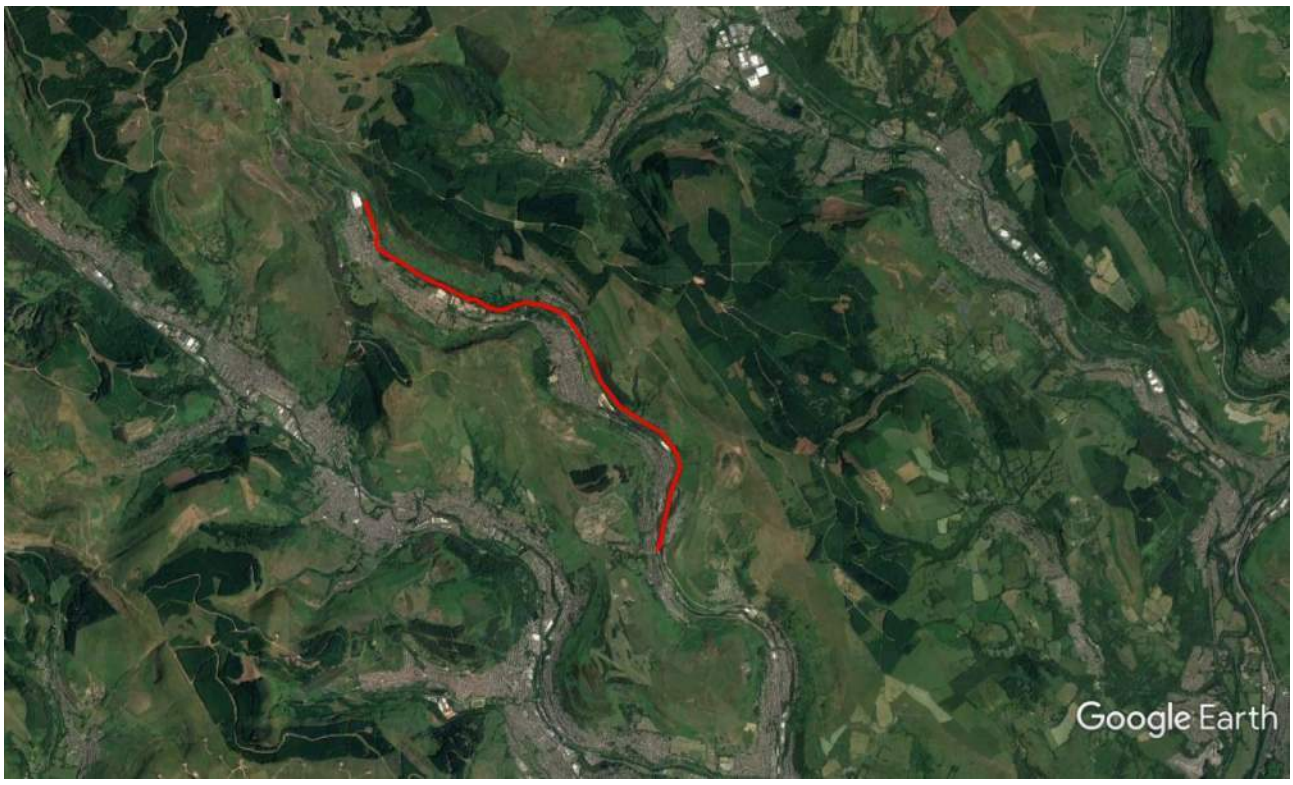


Figure 1 – Aerial image of the site (red line shows the approximate route). Image used under licence (©2019 Google). Imagery date 25/08/2018.

Proposed development

1.4 The site is the subject to plans to implement a new cycleway along the former railway line and pathways present along the route. This will require potential engineering works to allow for the 4.5m wide 10km long route to be established.

Purpose of this report

1.5 The purpose of this report is to provide information to the client to aid identification of any further information which may be required before a full assessment can be made.

2 METHODOLOGY

Desk study

2.1 A biodiversity desk study was undertaken in relation to the site in January 2019. The sources consulted and the type of information obtained are summarised in Table 1.

Table 1 – Sources of biodiversity and ecological records.

Source	Information requested (search buffer from site centre/boundary)
South East Wales Biodiversity Records Centre (SEWBReC)	• Protected and priority species (1km) • Sites of local importance/designation (1km) • Priority habitats (1km)
Multi-Agency Geographic Information for the Countryside (MAGIC)[1]	• International statutory designations (5km) • National statutory designations (1km)
Rhondda Cynon Taff	• Sites of local importance/designation (1km)

2.2 The search buffers are considered to be sufficient to cover the potential zone of influence (ZoI[2]) of the proposed development.

2.3 The impact of the proposed development on the biological integrity of any nearby designated protected sites has been fully considered.

2.4 No previous survey information was available for the site itself.

Field Survey

2.1 A field survey was undertaken on 19 March 2019 and the 30 April 2019.

2.2 All habitats present within the site with the potential to support rare, protected, or otherwise notable species of flora or fauna (together with any direct signs) were noted.

2.3 In the context of this report, rare, protected, or otherwise notable species of flora or fauna were those considered to meet any of the following criteria:

- Species protected by UK or European legislation (see Appendix V);
- UK Post 2010 UK Biodiversity Framework priority species or Local Biodiversity Action Plan (LBAP) species;
- Nationally rare or nationally scarce species;
- Species of Conservation Concern (e.g. JNCC Red List, RSPB/BTO Red or Amber Lists).

2.4 A PEA habitat map was drawn up incorporating target notes used to highlight features of particular ecological interest (see Appendix I and GIS layers appended).

2.5 The Wildlife and Countryside Act (1981) as amended, makes it an offence to release or allow to escape into the wild any animal, plant or micro-organism not ordinarily resident in the UK (as listed in Schedule 9 of the Act). Plant species listed in Schedule 9 were searched for during the survey. Examples include species such as Japanese knotweed (*Fallopia japonica*) and Himalayan balsam (*Impatiens glandulifera*).

[1] http://magic.defra.gov.uk/MagicMap.aspx
[2] ZoI definition – 'the areas/resources that may be affected by the biophysical changes caused by activities associated with a project' (CIEEM, 2016).

Author information

2.6 The desk study was undertaken by Alex Pollard. The field surveys were undertaken by Alex Pollard assisted by Jody Webb, and Kiani Perera. See Table 2 for further information.

Table 2 – Surveyor information.

Surveyor	Licences	Ecological experience
Alex Pollard Ph.D., B.Sc. (Hons.), MCIEEM Principal Ecologist	Bat Dormouse Barn owl	Holds a Ph.D (Visual constraints in bird behaviour). Experienced in undertaking ornithological surveys, and bat surveys. Is a licensed bat and dormouse ecologist in England and Wales. Supervisor and advisor to undergraduate and postgraduate ecological research projects.
Kiani Perera B.Sc. (Hons) Assistant Ecologist	GCN	Experienced field surveyor, undertaking bat, reptile, amphibian (inc. GCN) and preliminary ecological appraisals. Working towards licences for bat, GCN and dormouse.
Jody Webb Survey assistant		Assisted with commercial ecological field work for several seasons.

Limitations and assumptions

2.7 The desk study will not produce a comprehensive list of plants and animals as this will be limited by factors that influence their presence (e.g. activity and dormancy periods) and levels of local recording activity (i.e. potential for under-recording). An assessment can however be made of the habitats within the survey area, their nature conservation value and potential to support protected or priority species.

2.8 No other limitations were encountered or assumptions made during the desk study.

3 RESULTS

Desk study

Designated sites (statutory)

3.1 There were no international statutory designations within 5km of the site and one national statutory designation within 2km (see Table 3).

Designated sites (non-statutory)

3.2 There were 18 local non-statutory designations within ~1km of the site (see Table 3).

Table 3 – Summary of designated sites in range of the site.

Site name	Designation	Description / key reason for designation	Approximate distance & direction
Pont-y-gwaith Hillside 8.42	SINC	A large area of dry heath and acid grassland (National Vegetation Classification of U2 and U4) and scattered bracken on the hillside above Pont-y-gwaith. Typical species of the bracken/acid grassland include common bent, heath grass, sheep's fescue, heath bedstraw, pill sedge, tormentil and foxglove. Dog violets are locally frequent and there is some potential fritillary butterfly habitat. The dry heath supports heather and bilberry.	Adjacent
Mynydd y Ffaldau 8.59	SINC	An extensive area of upland conifer plantation, which although primarily planted with Sitka spruce, supports significant areas of larch, western hemlock, noble fir and broadleaf planting. The plantation represent significant woodland bird habitat for conifer specialists, including crossbill, siskin, redpoll, and goshawk as well as typical native woodland species, such as chaffinch, robin, song thrush and blackbird. There are now large areas of clear felled areas supporting breeding nightjar. The plantations were planted into upland heath, acid grassland and bog. On rides and clearing the original vegetation persist, and there are significant areas of upland marshy grassland, heath and bracken. Dark green fritillary butterflies have been recorded within forestry clearings. The conifer plantations also subsumed two-replanted ancient woodland and these have the potential for restoration. The SINC includes the Graig Y Gilwern (SS 997982). The crags support acid cliffs, acid scree, dry heath (heather, bell heath and bilberry) and scattered birch and rowan trees. The site has populations of parsley fern and reports of cowberry. Within the upland plantations, the SINC also includes the Roman Marching Camp. This ancient monument supports an expanse of dry heath and acid grassland with bilberry, sheep's fescue, wavy hair-grass, tormentil, heath bedstraw and smaller areas of wet heath (purple moor-grass and cross-leaved heath. The site supports grayling butterflies.	Adjacent
Blaenllechau Woodland 8.61	SINC	Upland ancient oak woodland, with some mature birch, rowan and ash. The bilberry, acid grassland (sheep's fescue, wavy hair-grass) and moss ground flora has been heavily grazed, but is recovering with some regeneration of oak, rowan and birch. The SINC includes the narrow corridor of oak alder woodlands, which grows on the steep sided banks of the upland stream. This has a mostly grassy ground flora with creeping soft grass, common bent, Yorkshire fog, and red fescue, but with	Adjacent

		occasional lesser celandine, common dog violets, wood anemone, soft rush, hard fern, broad buckler fern, male fern and wood sorrel The SINC also includes an extensive lower valley area of dry heath (heather and bilberry) and bracken/acid grassland (National Vegetation Classification U4) with flushed areas of purple moor-grass (National Vegetation Classification M25) and Ivy-leaved bellflower. Also associated with old quarry workings there are further areas of dry heath, acid grassland mosaic, and on the lowest flat ground of the old railway line sidings there is a further heath and scrub mosaic (with locally abundant dog violets). The heath/acid grassland support very large grayling butterfly and mottled grasshopper colonies, and the violet rich banks of the railway sidings are likely breeding habitat for the dark green fritillary (and high brown) colony, which occurs in the vicinity	
Old Smokey Slopes 8.65	SINC	An extensive area of mosaic ffridd habitat, based partly on natural ground and partly on coal spoil. Acid grassland (mainly forms of U4) is the predominant vegetation and characteristic species include sheep's fescue, common bent, sweet vernal grass, heath bedstraw, heath grass, sheep's sorrel, heath speedwell and heath wood-rush with matt grass on more exposed ground. Stands of tall bracken are associated with a ground flora of acid (or flushed grassland) and scattered trees. Dog violets are locally abundant on bracken and acid grassland slopes. Dry heath (often in mosaic with acid grassland) is an important habitat with bilberry and heather with wavy hair grass and areas of lichen heath with cladonia species. There are two small ponds, both of which support a diverse flora (including marsh St. John's wort and alternate water milfoil). The mixture of habitats, on a west-facing slope, represents excellent habitat for a diversity of fauna. Highlights include an important butterfly fauna (including grayling, high brown fritillary, dark green and small pearl-bordered fritillary butterflies), dragonfly populations, mottled grasshoppers, abundant green tiger beetles, good reptile (including common lizard) and amphibian habitat (common frog, toad and palmate newt), and distinctive bird assemblage, which include stonechat and whinchat.	Adjacent
Cefn Craig Amos 8.106	SINC	An extensive ffridd site, which lies along the eastern valley side of the Rhondda Fach. Large areas of dry heath and scree dominate the steeper mid and upper slopes, while lower slopes support mosaics of dry and wet heath, flushed marshy grassland and bracken. Bracken dominates the lower slopes, giving way to acid grassland, heath and scree higher on the slope. Several small streams cut across the slope in shallow valleys. Flushed areas of purple moor-grass and sphagnum bog mosses punctuate the lower slopes. There are scattered mature sessile oak trees (especially at the eastern end) with groups of young birch and oak. The bracken slopes support an under-storey of acid grassland and foxglove. The larger stands of acid grassland (National Vegetation Classification U4) support sheep's fescue, tormentil, sheep's bedstraw, and occasional ivy-leaved bellflower. The marshy grassland (National Vegetation Classification M25) is rank with some tormentil and soft rush. The dry heath supports heather, bell heath and bilberry with cross-leaved heath in flushed areas. There are small areas of Cladonia lichen heath. Common frog is present in pools and wet marshy grassland and common lizard has been recorded.	Adjacent

Taff and Rhondda Rivers 8.142	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, sand martin, otter, salmon and brown trout. Notable features include shingle banks (which may support important beetle and invertebrate faunas) and sections of undercut bank, and bank side woodland. In places the River Taff SINC extends to include larger areas of associated habitat, this occurs notably at Webb's Timber Yard at Treforest and the modified floodplain grassland and woodland associated with the Cilfynydd Waste Water Treatment Works. The land at Webb's Timber Yard includes large areas of broad-leaved woodland and grassland, both primarily associated with old railway embankments. The woodlands are predominantly secondary in nature but are mature and relatively species-rich, with birch, sycamore and hawthorn the main canopy species, with alder, oak, alder buckthorn, willow, and dog rose all present. In places wet alder carr occur, and along the Nant-y-Fforest stream there is a strip of ancient woodland. In general the drier secondary woodland ground flora supports ivy, male fern, broad buckler fern, herb robert, bramble, enchanter's nightshade, wild strawberry, germander speedwell, wood dock, creeping soft-grass and wood sedge. Where wetter woodland occurs the ground flora includes marsh or swamp ground flora with opposite-leaved golden saxifrage, marsh bedstraw, lesser spearwort, water pepper and marsh violets. Areas with ancient woodland characteristics include hazel coppice, with bluebell, yellow archangel, hard fern, lady fern, scaly male fern, hart's-tongue fern and broad-leaved helleborine. The grasslands occur as grazed glades within the woodland complex. The pastures are heavily over-grazed and their structure and composition suffers as a result, but they still represent relatively diverse semi-improved dry and marshy compositions. Typical species include common bent, Yorkshire fog, rye grass, self heal, autumn hawk bit, sheep's sorrel, field woodrush, common centaury, eyebrights, common knapweed and thyme leaved speedwell. In marshy areas devil's-bit scabious is locally abundant, with sharp flowered rush, water mint, marsh bedstraw, lesser spearwort, marsh pennywort, common sedge and bristle scirpus (*Scirpus setaceus*). The Rhondda River (Fach and Fawr) is a typical 'spatey' upland river, with pools and riffle sequences. The river is clean and supports a diverse invertebrate fauna, with brown trout, and potentially salmon. The river supports a good breeding bird assemblage; dipper and grey wagtail are common breeders, and kingfisher is also frequently reported (although nesting Sites are more limited). Sand martins breed in a number of locations, using drainage holes in retaining walls. In the winter goosanders are a frequent visitors, and herons feed along the river throughout the year. Otter have recently re-colonised the Rhondda. The SINC boundary in the Rhondda closely flows the river corridor, and in urban locations the SINC boundary is tight to the riverbank. Elsewhere the river corridor of the SINC is expanded in areas where a dry heath, marshy grassland or woodland occurs in close association with the river.	Adjacent
Mynydd Troed-y-rhiw Slopes 8.43	SINC	The SINC encompasses an extensive area of diverse 'ffridd' on the western valley side of the Rhondda Fach. The hillside supports large areas (20 plus hectares) of bilberry and heather dry heath. There are also	420m SW

		extensive areas of unimproved acid grassland (National Vegetation Classification U4). The acid grassland and heath occurs in often-complex mosaics, and typically includes heather, bilberry, common bent, sheep's fescue, heath grass, heath bedstraw, heath speedwell, tormentil, and sheep's sorrel. The Standard Tip is a feature of the SINC. It supports sheep grazed dry heath and acid grassland with heather, bilberry, wavy hair-grass, matt grass, heath bedstraw and sheep's sorrel. Amongst 70-recorded bryophyes and 74 lichens, the tips support indicators of good quality lichen-heath with ciliated fringewort (*Ptilidium ciliare*), nine recorded Cladonia lichens and the lichen *Peltigera hymenina*. On the sides of the Standard Tip there is an extensive flushed bracken hillside. This supports further areas of acid grassland (with occasional dog violets), and also acid flushes. The marshy grassland areas support soft rush and purple moor-grass (with National Vegetation Classifications of M23/M25). The numerous flushes include stands of the moss *Polytrichum commune*, bracken, creeping bent, tormentil, heath bedstraw, remote sedge, field horsetail, jointed rush, and marsh thistle. There are also areas of scrub and emerging woodland. The site includes the locally valued Holly Pond (supporting breeding frogs, toad and palmate newts) and a number of upland ponds (with Sphagnum bog moss communities). Old quarries, and rock faces occur on the slopes above Ynyshir, these add to the habitat diversity of the SINC with further heath, fern and moss communities. The SINC supports typical ffridd/upland bird communities including skylark, wheatear, meadow pipit, stonechats and reed buntings. The quarry cliffs represent suitable raven nesting habitat. A total of 97 moth species have been recorded including a number of noteworthy species, such as double line, marsh oblique-barred and small rufus. Grayling butterfly colonies occur, and the presence of dog violets within the bracken slopes offers potential for dark green fritillary. Seven species of dragonfly have been recorded.	
Darran Park 8.116	SINC	An ancient oak, birch, alder, sycamore and hazel woodland, in the cwm overlooking Darran Park, Ferndale. The mature woodland has recovered from the heavy sheep grazing. The shaded damp woodland supports a typical fern, moss and lichen flora. The SINC includes the inaccessible crags and rock face of the cwm, and areas of dry heath and acid grassland, with heather, bilberry, tormentil, sheep's fescue and wavy hair-grass and small areas of soft rush marshy grassland at the foot of the woodland. Darran Park supports excellent woodland bird habitat, the open structure woodland has a high potential for pied flycatcher, wood warbler and redstart.	472m W
Maerdy Colliery 8.76	SINC	Areas of dry heath, acid grassland, marshy grassland, bracken, swamp and pools associated with the derelict Maerdy Colliery site. The site consists of a mixture of old colliery spoil, and small areas of original ground. Much of the dry heath is firmly associated with coal spoil, and support heather and bilberry with areas of Cladonia lichen-heath, the heath grades into acid grassland with sheep's fescue, wavy hair-grass, common bent, mat grass, tormentil, sheep's sorrel and heath bedstraw. Areas of impeded drainage support associated marshy grassland.	567m NW

		The site supports a colony of grayling butterfly, keeled skimmer dragonfly, brown-banded carder-bee and two club-mosses (stag's horn and fir). Frog, common toad and palmate newt have also been recorded, and a typical ffridd bird assemblage, including whinchat, stonechat, tree pipit and reed bunting.	
Mynydd Ystradffernol 8.26	SINC	A huge upland plantation, which lies on the deep peat of Mynydd Ystradffernol. The great majority of the SINC is Forestry Commission managed upland Sitka Spruce plantation. This is almost exclusively planted into peat, which includes large areas of deep peat (blanket bog). The Site also includes experimental groves of Eucalyptus plantation. The plantations are extensive that represent very important bird habitat. Crossbills, siskin, redpoll all occur, together with large numbers of song thrush, blackbird, robin and chaffinch. Cuckoo is common. Goshawk is present, and merlin may breed around the edge of the plantation. Grasshopper warblers use areas of purple moor-grass mire, and willow scrub, and great grey shrike winter in clear fells. Nightjar breed in the same clear fells. The SINC has large areas of purple moor-grass marshy grassland, together with the remnant peat bogs (cross-leaved heath, sphagnum bog mosses, cotton-grass etc). There are numerous small peat bogs, together with forestry pools. Despite its altitude, the site has excellent amphibian potential, with palmate newts and common frog both recorded. The river valley of the Rhondda Fach above Lluest Wen Reservoir has a wide recessed valley floor, with an expanse of sedge, and purple moor-grass mire and willow scrub. Lluest Wen and Castell Nos Reservoirs are both large area of open water, with associated breeding and wintering wildfowl and the locally uncommon, shoreweed. The hillsides on the western flanks of the Reservoirs support important areas of dry and wet heath.	660m W
Mynydd Brith-weunydd / Llwynypia hillside 8.40	SINC	This extensive SINC covers the hillside above Llwynypia, from the Penrhys road in the north, to the edge of Trelaw. The northern slopes (approximately 20 hectares) support a mosaic ffridd. These moderately steep bracken covered slopes are flushed by a series of spring lines. They support a very species rich and diverse biodiversity habitat, with bracken and acid grassland (National Vegetation Classification U4 with spring sedge, sawwort, sheep's-bit and ivy-leaved bellflower) and dry heath (heather, bilberry and western gorse) on drier ground. Numerous wet acidic flushes, with areas of purple moor grass marshy grassland (National Vegetation Classification M25) and wet heath occur where springs and flushes emerge. These support a diverse flora including bog asphodel and creeping willow. The majority of the SINC occurs on steep valley sides and support an extensive area of dry heath (approaching 100 ha). This is characterised by the abundance of heather, bell heath and bilberry with associated acid grassland (National Vegetation Classifications U1, 2 and 4), stands of bracken over acid grassland, and scattered trees (including rowan). There are associated old coal working with areas of lichen-heath and acid grassland. Mynydd Brith-weunydd represents one of the largest stands of lowland heath in the County Borough. The warm sheltered hillside of the SINC supports a very important breeding bird population with whinchat, stonechat, and meadow and	674m WSW

		tree pipits. Barn owl (which nest in the immediate area) hunt over the slopes. The hillside supports slow worms and is important invertebrate habitat with several colonies of small pearl-bordered fritillary and green hairstreak butterfly.	
Mynydd Ty'n-tyle Slopes 8.64	SINC	A large upland SINC, which supports a complex mosaic of acid and marshy grassland, ffridd and heath. The acid grassland varies from sheep grazed upland (National Vegetation Classifications of U4 and U5) characterised by sheep's fescue, heath bedstraw, and mat grass, through to taller wavy-hair grass dominated grassland on steeper slopes (National Vegetation Classification U2). There are extensive stands of both heather and bilberry-dominated heath, with associated acid grassland and areas of western gorse. The upland plateau support areas of marshy grassland (National Vegetation Classification upland M25) and on peat wet heath (National Vegetation Classification M15) with deer grass, common and hare's foot cotton grass, sphagnum bog moss and cross-leaved heath. There are additional areas of neutral grassland (National Vegetation Classification MG6) and bracken. The SINC supports upland bird assemblages, including large numbers of skylark, meadow pipits and smaller numbers of wheatear, and stonechat, whinchat and linnet in lower valley side ffridd. Short-eared owl occurs in the winter.	892m SW
Nant Pentre Forestry 8.180	SINC	Most of the SINC is a large Forestry Commission conifer plantation on the hillside above Pentre. The plantation is a mix of Sitka spruce, larch and noble fir. The site was originally upland acid grassland and heath, and these form part of the plantation's ground flora. Parts of the plantations lower slopes are replanted ancient woodland. The site represents high potential for conifer bird species including crossbill, siskin, redpoll and goshawk. The SINC also includes a small area of ancient oak woodland.	914m SWS
Treorchy Slopes 8.181	SINC	An extensive and classic example of upland peat bog, acid grassland and valley side ffridd and heath land. The upland plateau support large areas of peat bog and associated marshy and acid grassland. The peat habitats include blanket bog, valley mire and wet modified bogs. These bogs vary from less diverse modified bogs to good quality blanket bog. Purple moor-grass is usually the dominant species, but with an associated species composition which includes deer-grass, cross-leaved heath, common cotton-grass, bog asphodel, round-leaved sundew, bottle sedge and sphagnum mosses. Bog pools are frequent in areas of valley mire. Marshy grassland dominates large areas of the upland plateau and also occurs as flushed component of the valley side ffridd above Treorchy. The marshy grasslands are mainly soft rush (National Vegetation Classification M23) and purple moor-grass (National Vegetation Classification M25) dominated, with tormentil, marsh bedstraw, marsh thistle and foxglove. The lower valley side slopes support the more diverse stands of marshy grasslands. Mynydd Maerdy supports extensive areas of wet and dry heath (with more modified bog). Bilberry, heather and wavy-hair grass dominate the dry heath, while cross-leaved heath and purple moor-grass are additional components of the wet heath. There is also a very significant acid grassland (National Vegetation Classifications U4 and some U5) component to the SINC with mat grass, sheep's fescue, wavy-hair grass,	950m W

		sweet vernal grass, heath bedstraw, sheep's sorrel, heath milkwort and tormentil. On the lower valley sides the acid grassland occurs in a complex mosaic with heath, marshy grassland, bracken, and forms typical ffridd habitat. The re-modelled coal tips of Ty'n-y-bedw support extensive stands of gorse. The SINC includes the valley of the Cwm Fforchy, which is a good quality upland stream with fast flowing water, gravel and bedrock bed, undercut banks, and associated areas of wetland, woodland and heath. Brown trout occur in the stream. The uplands areas support strong populations of skylark and meadow pipit, and smaller numbers of stonechat, whinchat and wheatear. Other locally important species include reed bunting, tree pipit and merlin. Snipe and jack snipe occur in the winter, and the blanket bogs represent a potential breeding site for snipe. Grayling butterfly and the mountain bumblebee *Bombus monticola* occur on the lower slope acid grassland. Pools and ponds support breeding populations of frog, toad and palmate newt. Common lizard and slowworm are well established on sheltered lower slopes.	
St Gwynno Forestry 8.38	SINC	An extensive area of Forestry Commission plantation, which runs across the ridge of Coetgate, Aberaman down to the St.Gwynno Forestry. The SINC is an expanse of mixed conifer plantation (with small broadleaved components), which occurs in varying stages of maturity. The main tree species are sitka spruce, larch, and lodgepole pine. Recent years has seen major clear fells. The plantations have numerous open areas, which support bracken, open regenerating woodland/scrub, dry heath (bilberry, heather, bell heath and wavy-hair grass), acid grassland (National Vegetation Classification U2 and U4) and marshy grassland (rank purple moor-grass M25). The SINC includes small areas of relic ancient woodland (Coed Aberaman) with oak, birch, ash, alder and hazel, and areas of scrub and bracken on the slopes of Coetgate Aberaman. The SINC is a renowned 'hot-spot' for nightjar, which occur in large numbers within the clear-fell and recently replanted areas. The site is also breeding habitat for goshawk, crossbill, siskin and redpoll and great grey shrike have been recorded in the winter. There are also unconfirmed reports of pine martin.	997m E
Ystrad Slopes 8.123	SINC	A large SINC, which encompasses part of the upland plateau of Mynydd Ty'n-tyle, and the valley slopes above Ystrad. Mynydd Ty'n-tyle is a sheep grazed expanse of upland close-cropped marshy and acid grassland. The grassland supports sheep's fescue, wavy-hair grass, common bent, sweet vernal grass, mat grass, heath bedstraw, green ribbed sedge, pill sedge, bilberry and the moss *Rhytidiadelphus squarrosus*. The valley side habitats are continuous with the Mynydd Ty'n-tyle and support areas of acid grassland (National Vegetation Classification U4), bracken, occasional acid flushes and dry heath, with heather, bilberry and western gorse. The site includes Cwm Bodringallt bog (SS964985) a perched bog, which amongst the sphagnum bog mosses and purple moor-grass supports cranberry and wintering snipe and jack snipe. The SINC includes the ancient woodland of Bodringallt Wood and associated woodland areas. The oak dominated woodland includes alder, ash, hazel, birch, holly, crab apple and lies on the valley sides of the fast	1.0km SW

		flowing Cwm Bodringallt. The open woodland structure supports suitable pied flycatcher, wood warbler and redstart habitat.	
Garn Wen and Panwen Garreg-wen 8.27	SINC	A large sitka spruce plantation on deep upland peat. The site includes significant elements of peat bog habitats, with areas of remnant blanket bog (sphagnum bog mosses, purple moor-grass, cross leaved heath and cotton-grasses), degraded bogs, wet heath and drier bilberry heath. Purple moor-grass marshy grassland (National Vegetation Classification M25) occurs within upland rides. The plantations are in varying stages of maturity, with large areas of dead fire-damaged plantation. The site has a diverse plantation/woodland bird fauna, including crossbill, siskin, redpoll, cuckoo, song thrush, blackbird, and chaffinch. There is potential goshawk and merlin habitat. Both species have been recorded. More open ground supports skylark, meadow pipit and whinchat. Dead polecats have been recorded on the Maerdy Road. The bog pools have good dragonfly communities including black darter and keeled skimmer. Common frog and palmate newt breed. Dark green fritillary butterflies occur.	1.05km N
Penrhiw Flushes 8.44	SINC	A large section of hillside ffridd on the east side of the Rhondda Fach. A typical complex ffridd mosaic of bracken and acid grassland (National Vegetation Classification of U4), with a series of acid flushes, areas of marshy grassland (National Vegetation Classification of M25), dry heath (heather, bilberry and wavy hair-grass), gorse and woodland. The bracken/acid grassland mosaic supports common bent, sweet vernal grass, sheep's fescue, mat grass, tormentil, heath bedstraw, heath milkwort, sheep's sorrel, and locally frequent dog violet. The woodlands support sessile oak, alder and rowan. The ground flora includes wood sorrel, scaly male fern, dog violets, lesser celandine, and wavy bitter-cress. In flushed areas there is opposite leaved golden saxifrage. Sphagnum bog mosses are locally abundant in the frequent acid flushes with bog pimpernel, bog pondweed, and around the edges of the flushes purple moor-grass marshy grassland with marsh thistle, carnation sedge, lady smock, meadowsweet and common marsh bedstraw. As good quality ffridd bird habitat, the SINC supports suitable tree pipit, whinchat and stonechat habitat. Grayling, small copper and small heath butterflies have been recorded. The areas of locally frequent dog violet offer potential fritillary butterfly habitat particularly. The warm, sheltered hillsides support reptiles with slowworm, common lizard and grass snake. Amphibians use the very wet flushed hillside (common frog and common toad are both recorded) and woodcock have been recorded in the acid flushes.	1.4km SE
Craig Pont Rhondda	SSSI	A coppiced sessile oakwood on east-facing Pennant Sandstone slopes, interrupted by gulleys and rocky exposures. The flora, except in wet flushes, is typically acidophilous. Educational value could be realised by suitable management.	1.88km W of southern end of site

Priority and protected species

3.3 Table 4 summarises the priority and protected species records found within the local area.

Table 4 – Priority and protected species records found in the vicinity of the site within the last 10 years.

Protected & priority		# of records (# species)			Further information
Groups	Species	Onsite	<500m	>500m	
Bats	Common pipistrelle	-	3	-	No roost records – foraging only within 66m of the site
	Unidentified pipistrelle	-	2	2	Nearest roost record for site 58m from site
	Natterer's bat	-	1	-	Individual male found during works 308m away from site
	Unidentified bat	-	10	2	Closest roost within 58m of the site
	TOTALS	-	*16 (4)*	*4 (2)*	
Mammals *(excluding bats)*	European otter	-	1	3	Nearest record 1m from site
	West European hedgehog	-	3	-	Nearest record for pins
	Polecat	-	1	-	Roadkill at 370m from site
	Harvest mouse		1	-	Record from 1974/75 at 395m from site
	TOTALS	-	*6 (4)*	*3 (1)*	
Herpetofauna	Common frog	-	7	7	Nearest record at 36m from the site.
	Common toad	-	1	2	Nearest record at 398m from the site.
	Palmate newt	-	-	1	Nearest record at 961m from the site.
	TOTALS	-	*8 (2)*	*10 (3)*	
	Common lizard		6	2	Nearest record at 222m from site.
	Slow worm	-	7	3	Nearest record at 194m from site.
	TOTALS	-	*13 (2)*	*5(2)*	
Fish	See further info	-	*13 (2)*	-	Brown/ sea trout (within 5m), Atlantic salmon (within 164m)
Birds	Schedule 1	-	*6 (5)*	*38 (13)*	Schedule 1 species: Red kite (nearest at 55m), goshawk, quail, peregrine, woodlark, kingfisher, merlin, hobby, brambling, common crossbill, black redstart, redwing, fieldfare, barn owl

Protected & priority		# of records (# species)			Further information
Groups	Species	Onsite	<500m	>500m	
	Non-schedule 1	-	55 (17)	132 (23)	Non-schedule 1 species: Curlew, ring ouzel, skylark, bullfinch, lesser redpoll, tree pipit, house sparrow, dunnock, reed bunting, kestrel, willow tit, cuckoo, yellowhammer, pied flycatcher, nightjar, starling, song thrush (nearest at 15m), black-headed gull, linnet (nearest at 15m), grasshopper warbler, spotted flycatcher, willow ptarmigan, wood warbler
Invertebrates	See further info	-	31 (6)	24 (4)	Grayling (nearest at 16m), small blue, high brown fritillary, dingy skipper, small pearl-bordered fritillary, pearl-bordered fritillary, tormentil mining bee
Plant	see further info	-	5 (1)	6(3)	Bluebell (nearest at 147m), corn buttercup, stag's-horn clubmoss
Lichens	see further info	-	-(-)	1 (1)	*Usnea articulata* (at 564m)

Priority and protected habitats

3.4 A number of habitats were returned from the local records centre search, within 1km of the site. These are outlined in Table 5 below along with their status as a priority habitat (Environment (Wales) Act 2016, Section 7 listed).

Table 5 – Habitats and linear features present within the local area.

Habitat type / Linear feature	#Polygons present	Priority habitat?
Dense scrub	2639	No
Bare ground	1718	No
Unimproved acid grassland	782	Potentially (if lowland dry acid grassland)
Planted coniferous woodland	751	No
Bracken	338	No
Marshy grassland	303	No
Semi-improved acid grassland	228	Potentially (if lowland dry acid grassland)
Standing water	208	Potentially (if rivers)
Semi-natural broadleaved woodland	192	Potentially (dependent on species present)
Improved grassland	163	No
Planted broadleaved woodland	110	Potentially (dependent on planting)
Planted mixed woodland	90	Potentially (dependent on planting)
Dry acid heath	57	Yes (both upland and lowland heathland)
Marshy grassland *Molinia* dominated	37	Yes (purple moorgrass and rush pastures)
Semi-improved neutral grassland	36	Potentially (if lowland meadows present)
Dry heath/acid grassland mosaic	30	Potentially (depending of composition, with upland and lowland heathland as priority habitats and lowland dry acid grassland also a priority habitat)
Acid/neutral scree	22	No
Wet heath	12	Yes (both upland and lowland heathland)
Felled coniferous woodland	10	No
Amenity grassland	9	No
Tall ruderal herb	8	No
Acid/neutral flush	6	Yes (upland flushes, fens and swamps)
Arable	3	Potentially (if arable field margins are present)
Wet modified bog	2	No
Spoil	2	No
Gardens	2	No

Field survey

Timing and conditions

3.5 Prevailing weather conditions during the field survey were good, with no rain and good visibility.

3.6 The distribution and extent of habitats observed within the site is illustrated in the PEA plan (see Appendix I). An accompanying species list (including scientific names) can be found in Appendix IV.

3.7 The habitats present onsite are described in detail in Table 6 using the standard Phase 1 survey habitat classification hierarchical alphanumeric reference codes (JNCC, 2010).

3.8 Please also refer to Table 6 for a list and description of the onsite target notes. The positions for these target notes are highlighted in the PEA plan in Appendix I.

3.9 The site was classified according to the following habitat types (Table 7): Broad-leaved woodland, scrub, acid grassland, bracken, tall ruderal, dry dwarf shrub heath, running water, ephemeral/short perennial, buildings, bare ground, hardstanding, coniferous plantation, mixed woodland, recently felled woodland, neutral grassland, amenity grassland. Walls and fences were also found throughout the survey site.

Table 6 – Target notes (in association with the PEA plan)

id	Target Note
1	Acid grassland edges
2	Birds' nests
3	Tree PRF (bat)
4	Japanese Knotweed
5	Himalayan Balsam
6	Heathland edges
7	Ditches/drains
8	Mammal tracks
9	Structure with PRF (bat)
10	Some larger trees present
11	Stream
12	Flooding
13	Crevices in wall/cliff
14	Debris pile
15	Work site
16	Some open areas suitable for reptiles
17	Young willow line
18	New planting (trees)
19	Heath understorey

Table 7 – Habitats and linear features present onsite.

Habitat type / Linear feature	Species present
A1.1.1 Semi-natural, broad-leaved woodland Patches of this habitat are found to the south and central parts of the route, with the southern area being comprised of larger trees and the central area of lower growth (likely due to the elevation ad substrate). There is wooded corridor along the river, with few larger trees, and most smaller and younger saplings.	Bramble, goat willow, alder, pedunculate oak, ash, cocksfoot, hogweed, yew, bracken, gorse, broad-leaved dock, willowherb sp, red deadnettle, sow thistle sp, elder, birch sp, ivy, blackthorn, maidenhair spleenwort, Leyland cypress, barren strawberry, sycamore, meadow buttercup, herb Robert, creeping buttercup, common nettle, wavy bittercress, dandelion, red oak, hazel, ragwort, rose, meadow thistle, primrose, hawthorn, bloody cranesbill, field maple, common polypoidy, cleavers, Himalayan balsam, foxglove, opposite-leaved golden saxifrage, daffodil,
A1.2.2 Plantation, coniferous woodland An offsite area to the east of the central section is comprised of forestry, with some areas felled.	n/a
A1.3.1 Semi-natural, mixed woodland Mixed woodland is found to the north of the site.	Larch, yew, pedunculate oak, ash, hogweed, bilberry, heather, dogwood, bracken, willow, alder
A2.1 Scrub (dense/continuous) and A2.2 Scattered scrub Scrub understorey is found throughout the woodland with varying degrees of openness. Encroachment of heath and grassland areas is also apparent.	Willow, bramble, gorse, buddleia, hedge woundwort,
B1.2 Semi-improved acid grassland Patches of this habitat type are found along the proposed route, with larger areas present in the local area.	Cocksfoot, crested dogstail, common knapweed, cleavers, common vetch, lesser trefoil, ragwort, field woodrush, jointed rush, hard rush, soft rush, sedge spp
B2.2 Neutral grassland (semi-improved) An area of neutral grassland is found to the south of the site.	LIST
C1 Bracken Patches of bracken were observed on the valley sides adjacent to the proposed route.	Bracken
C3.1 Tall ruderal Small areas of this habitat are found along the route.	Japanese knotweed, common nettle, willowherb spp, rosebay willowherb, greater willowherb, spear thistle, bracken, evening primrose

Habitat type / Linear feature	Species present
D1.1 Acid dry dwarf shrub heath Several heathland areas are present onsite, with wooded areas and scrub having heath understorey.	Bilberry, ribwort plantain, bramble, common knapweed, cocksfoot, heather, bracken, soft rush, field woodrush
G2 Running water There is a river running alongside the proposed route, as well as several streams and channels entering the main flow.	n/a
J1.3 Ephemeral/short perennial Where there have been access to sites for works, or around gateways, growth coming through is of this type.	Ribwort plantain, creeping cinquefoil, sow thistle, sycamore (seedlings), white clover, mullein sp, germander speedwell, groundsel, greater plantain
J2.4 Fence and J2.5 Wall Fences and walls are present within the site boundaries, with block, brick, stone walls and wooden, metal palisade, post and rail, post and wire and barbed wire fences noted.	n/a
J2.6 Dry ditch There were several ditches onsite, running alongside the existing pathways and woodland areas.	n/a
J3.6 Buildings The route passes several residential properties as well as commercial and industrial units.	n/a
J4 Bare ground Where site access to works has been made, there is bare ground.	n/a

Invasive species

3.10 Stands of Japanese knotweed and Himalayan balsam were identified onsite. Target notes 4 and 5 highlight these areas on the PEA plans.

Onsite fauna

3.11 The presence of the following species were observed or detected around the site during the survey: woodpigeon, dipper, bullfinch, dunnock, blackbird, robin, blue tit, jackdaw, wren, nuthatch, great ti, coal tit, magpie, goshawk, buzzard, raven, red kite, heron, kingfisher, chaffinch, mallard, white-tailed bumblebee, orange-tip and peacock butterfly.

4 INTERPRETATION AND ASSESSMENT

4.1 The proposed development will require displacement of onsite habitats and disturbance to their associated features. This section concerns an assessment of ecological impacts resulting from the proposed development.

4.2 The following interpretation and assessment is provided to ensure full compliance with both UK and European legislation and both local and national planning policy (see Appendix V), and is based on a desk study only.

Designated sites

4.3 There were both statutory and non-statutory designated sites identified within the vicinity of the site (see Table 4). The closest statutory site was Craig Pont Rhondda SSSI and there were several adjacent non-statutory sites (Taff and Rhondda Rivers, Cefn Craig Amos, Old Smokey Slopes, Blaenllechau Woodland, Mynydd y Ffaldau and Pont-y-gwaith Hillside – all SINCs) at various points along the proposed route.

4.4 Given the scale of the proposed development, and the lack of likely impacts beyond the site boundary, the nearby statutory designated site is sufficiently well separated so that no impacts on their designated features are anticipated as a result of the works.

4.5 Depending on the onsite habitat and engineering required at the points where the SINCs are adjacent to the site, there may be impacts upon their features in the absence of mitigation. SINCs that are located further away are unlikely to be impacted by the proposals.

Priority and protected habitats

4.6 Several priority habitats (as listed in Section 7 of the Environment (Wales) Act 2016) were present in the local area and which may be found to some degree onsite.

4.7 Table 5 outlines these habitats.

4.8 The proposed routes will likely impact upon heathland and the river in the absence of mitigation, both of which are priority habitats. There are areas of acid grassland onsite but the areas likely to be impacted do not classify as a priority habitat, given their quality.

4.9 The heathland areas may be impacted through direct loss of small sections. There are already paths through the area and the proposals will widen these existing routes. The river is unlikely to be impacted by any direct means, but may, in the short-term, be exposed to pollution events during construction works.

Priority and protected species

4.10 A range of priority species (as listed in Section 7 of the Environment (Wales) Act 2016) were present or likely to be present onsite (see Table 4), with these including bats, other mammals, reptiles, birds, amphibians, invertebrates, plants, fish and lichens.

Bats

4.11 The local records search returned a number of records for bat species in the vicinity of the site (see Table 5).

4.12 There were several structures (bridges, walls, cliffs and trees) on and along the site which offer a range of roosting opportunities for bats. In addition, the vegetated and mainly unilluminated river corridor

offer excellent foraging and commuting opportunities for a range of bat species, including horseshoes, and *Myotis sp*

4.13 The proposals will not remove any trees with bat features, and neither will impact upon the bridges or walls, or cliff faces that may provide roost space for bats.

4.14 There is no additional lighting planned and so there will be no habitat fragmentation associated with the proposals.

4.15 A small amount of habitat will be disturbed and lost but there will be continued foraging resources and commuting corridors post-works also, and so no impacts are perceived on bats using the local area in this way.

4.16 There will not be a negative impact on bat species as a result of the proposed development.

Common dormouse

4.17 The local records search returned no records for common dormouse in the vicinity of the site (see Table 5). It is possible that dormice are under-recorded in the area however.

4.18 There are some habitats onsite which offer foraging and nest resources for dormice (scrub, woodland) however there will be very limited losses of these habitat types, and so impacts are perceived to be negligible for dormice, if they are present in the area.

4.19 As a precaution, sensitive working methods are advised to be followed.

4.20 There is unlikely to be a negative impact on common dormouse as a result of the proposed development.

European otter

4.21 The local records search returned a number of records for European otter in the vicinity of the site (see Table 5), with the nearest within 1m of the site (on the river corridor).

4.22 The presence of the river running parallel along the site provides otter with multiple opportunities to enter the site. It is therefore highly likely that otter will use the wider area and site to rest within. Several mammal paths were noted within the woodland to the south of the site, leading into bramble scrub. The paths cannot be conclusively attributed to otter, especially with the paths present used by dogs, and likely other species e.g. people, foxes.

4.23 Given the high levels of disturbance to the vegetation immediately bounding the existing paths, it is highly unlikely that there will be any otter holts or couches within this area; these may however be found deeper into thicker undergrowth and woodland (to remain unaffected by the proposals).

4.24 There may be a negative impact on European otter as a result of the proposed development, in the absence of the mitigation.

Great crested newt and amphibians

4.25 The local records search returned no records for great crested newt in the vicinity of the site (see Table 5), though several records of more common species of amphibians were returned.

4.26 The river itself has a flow rate which precludes use by amphibians, however ditches and wetter habitats in splash zones are likely to offer good conditions for amphibians. It is unlikely that there will be any significant breeding populations within the site, as there are limited suitable water features (at the time of the survey, the ditches were mainly dry or very low water – the surveys were completed within the amphibian breeding season).

4.27 The ditches and wetter areas will remain as they are and so no impacts through loss of habitat are anticipated. Precautionary working methods will mitigate for any impacts during construction.

4.28 There is unlikely to be a negative impact on great crested newt as a result of the proposed development.

Reptiles

4.29 The local records search returned a number of records for reptile species in the vicinity of the site (see Table 5).

4.30 Records for slow worm and common lizard were noted in the local area, and there were suitable habitats across the site, particularly where there was a scrub, grassland, heath mosaic.

4.31 Given the proximity of the records, it can be assumed that reptile species (including grass snake and adder) will be found onsite.

4.32 Precautionary working methods will be used to ensure that there will be no impacts on reptile species both during and post-construction.

4.33 There may be a negative impact on reptile species as a result of the proposed development.

Nesting birds

4.34 The local records search returned a number of records for nesting bird species in the vicinity of the site, including some Schedule 1 designated species (see Table 5). In addition, several bird species were encountered onsite during the PEA.

4.35 Whilst the vegetation clearance (scrub/woodland) will be minimal, these may still be used by nesting birds during the breeding season. The species present are likely to include more common species due to the habitats present within a disturbed (by humans and dogs) area. There are limited features for larger birds of prey due to the levels of disturbance and lack of suitable habitat; and no features suitable for use by barn owl.

4.36 There may be a negative impact on nesting bird species as a result of the proposed development.

Mammals (non bat or otter)

4.37 The local records search returned a number of records for hedgehog, polecat and harvest mouse in the vicinity of the site (see Table 5).

4.38 The harvest mouse record was a historic record (1974) and found within farmland to the east of the site. There is no suitable onsite vegetation for use by this species.

4.39 There are wooded areas adjoining the site and forming the river corridor which are likely to be used by polecat. Given the limited vegetation removal, and continued habitat available, there is unlikely to be any impacts on polecat.

4.40 Similarly, there are good habitats suitable for use by hedgehog, and so any clearance work may impact upon this species, due to their habit of using leaf litter layers to hide within. They therefore may be impacted by the clearance works.

4.41 No signs of other mammals were observed (e.g. setts, latrines or badger hairs).

Invertebrates

4.42 The local records search returned a number of records for invertebrate species in the vicinity of the site (see Table 5).

4.43 Whilst the surveys were completed in March and April, prior to the flowering period for many wildflowers which may support invertebrates, no species (in a vegetative state) of high value were observed, for example devil's bit scabious.

4.44 There will continue to be the same habitats and species present for invertebrate foraging resources along the route, with only minor loss of habitats for terrestrial invertebrates, and no loss of habitat for any aquatic invertebrates.

4.45 There is unlikely to be a negative impact on invertebrate species in the longer term as a result of the proposed development.

Fish

4.46 The local records search returned a number of records for fish species (salmon and sea/brown trout) in the vicinity of the site (see Table 5).

4.47 These were found within the river running along the proposed route. There will not be any impacts on fish species as there will be no works impacting the river directly. There may be indirect impacts through pollution events (e.g. dust or debris entering the river) during construction however, in the absence of mitigation.

Lichen and plants

4.48 Several records were returned for lichen and plant species in the vicinity of the site.

4.49 Bluebell were noted within woodland towards the south of the proposed route, though no corn buttercup or stag's horn clubmoss were observed. The corn buttercup record was dated 1875-1903, with this species extremely rare and not noted more recently in the area. Stag's horn clubmoss is found on heathland, however the heathland onsite and to be potentially impacted by the proposals was dominated by heather (in the north) and bilberry along the central sections, with scrubbier areas encroaching. The lichen species returned (*Usnea articulata*) is very rare, and is highly sensitive to sulphur dioxide pollution, meaning its range in Wales is restricted to less urban or polluted areas. The returned record was dated 2016 but was for a site to the west in an elevated position. The woodland in the area of the proposals is within the river valley which also includes urban areas and so is more likely to have more pollution present.

4.50 It is unlikely that there will be any impacts on protected plants and lichen species as a result of the proposals.

Invasive species

4.51 There were several stands of Himalayan balsam and Japanese knotweed found onsite. These are examples of invasive plant species included in Schedule 9 of the Wildlife and Countryside Act (1981), as amended.

4.52 A long-term strategy is advised to be implemented to eradicate these species from the area, in collaboration with local land-owners. The proposals, if the route is to require the removal of these, will require input from a specialist invasives contractor. It may be possible to avoid impacting on the knotweed or balsam, through following a line of least resistance, however for knotweed, the roots may be under the existing paths, and so any excavation is likely to cause disturbance. Removal of excavated material will require it to be disposed of as controlled waste.

Table 8 – Indicative potential impacts of the proposed development affecting onsite protected species.

Species	Negative impact* (plus scale and nature of impact)
Bats	Minor loss of foraging habitat in the short term; negligible impacts otherwise.
Common dormouse	If present, loss of minor habitat in the short term; negligible otherwise
European otter	Disturbance during construction; excavation related injury/entrapment
Great crested newt	Negligible
Reptiles	Killing/injury during construction; minor loss of habitat
Nesting birds	Disturbance/damage to nests during construction; loss of minor foraging habitat
Polecat	Negligible
West European hedgehog	Killing/injury during vegetation removal; excavation related injury/entrapment
Invertebrates	Negligible
Fish	Negligible
Plants/lichens	Negligible

*Ultimate assessment of the scale and nature of impacts is dependent upon on final design of proposed development and exact habitats affected.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Wildwood Ecology was commissioned to undertake a Preliminary Ecological Appraisal (PEA) of Proposed Rhondda Fach Cycle Route.

5.2 The site is the subject of a proposal for a new cycle route and associated engineering. The proposals will involve the widening of existing pathways, where possible and using already present sections of path.

Designated sites

5.3 Statutory designated sites in the vicinity of the site (see Table 4) are sufficiently well separated so that no impacts on their designated features are anticipated as a result of the proposed development.

5.4 The Taff and Rhondda Rivers SINC is adjacent to the site, with a precautionary working methodology used to prevent any pollution entering the water course. Pollution may be dust, fuel, silt, materials or chemicals, and adequate protection is advised to be used as appropriate for each e.g. spill kit with trained personnel on site; dust/silt fencing.

5.5 The other SINCs will not be impacted by the proposals.

Protected habitats

5.6 There are small areas of heathland which will be potentially impacted by the proposals. This will involve the widening of the existing path and so a strip of habitat will be lost. These areas are not particularly of high quality, with scrub encroachment due to a lack of management.

5.7 To mitigate for the loss of heathland (if the habitat cannot be avoided), management of a similar area of adjacent scrub (removal of bramble and young saplings and either translocation of the heathland habitat in sections; or plug planting of heather and bilberry in this area (Appendix V, marker 1 and 2); in combination with long-term scrub management to prevent encroachment) is recommended. Additional scrub management is advised at the edges of acid grassland and other areas of heathland to ensure their long-term success. Vegetation cuts will be timed to avoid the sensitive breeding bird season (i.e. completed outside of March to August). Areas of plug planting will require management more regularly until established – for any areas planted with devil's bit scabious (enhancement plan, marker 3), vegetation will need to be cut in winter to allow flowers and seeds to form and fall in later summer/autumn.

5.8 Protection of the river and its associated wildlife is advised as outlined in 5.4.

Protected species

5.9 Recommendations regarding protected species are shown in Table 9. See Survey Calendar in Appendix VI for optimal survey timings.

Table 9 – Recommendations.

Species	Recommendations
Bats	No further surveys required. No working at night; no night illumination of the route above existing levels.
Common dormouse	No further surveys required (very small amount of suitable habitat to be removed). Removal of vegetation to be completed in winter (November to March), with any rootballs with access for small mammals to be retained, and removed only after May (or before October). Works will cease if any nest or small mammal is found, with the project ecologist contacted for advice immediately.
European otter	No further surveys required. Any areas of denser vegetation removal (unlikely) will require a pre-commencement check for otter by the project ecologist. If otter (or any other protected species) are found, works will cease and NRW contacted for advice. An EPSL may be required, along with mitigation/compensation measures.
Great crested newt/amphibians	No further surveys required. Vegetation to be removed cautiously, using hand held strimmers with the operatives briefed on the species that may be encountered. Vegetation will be removed following a method statement (see below) to avoid impacting upon amphibians. Rock, brash and debris piles and walls will be dismantled (if required) only in warmer weather (outside of November to March) to avoid impacting upon potential hibernation sites.
Reptiles	It is assumed that reptiles are present onsite. A reptile mitigation strategy is required: • A two-stage cut will be completed during April to October, or a one-stage cut between November to February (whilst reptiles are below ground), using hand-held strimmers. • Vegetation will be cut to 150mm on day 1, and then to ground level on day 3. • Strimmers will move from the unvegetated side of the path towards retained habitat to allow dispersal of the reptiles to retained habitats. • Any debris, brash or rock piles or walls will be dismantled/worked upon outside of the winter period to prevent impacts to hibernating animals (as above) • Excavations will not be left open for more than 24hours to prevent access by snakes/slow worm which may not be able to escape. • Prior to any vegetation removal, contractors will be briefed by the project ecologist on the likely presence of reptile species and the way in which they need to work. • Brash piles created on the edges of the cut areas to provide habitat for reptiles and other species. • Each contractor will sign the statement in Appendix IV to state that they are aware of the species present and that they will abide by the best working methods to avoid offences or impacts to protected species.
Nesting birds	If habitats suitable for nesting birds are to be removed, then any vegetation clearance will take place outside of the bird nesting season. In the event that clearance work has to be undertaken during the nesting season (generally from 1st March until 31st August, although birds are known to nest outside of these dates in suitable conditions), a breeding bird survey will be required and must be carried out by a suitably qualified person. Any active nests identified should be protected until the young have fledged. Where a Schedule 1 species (as defined in the Wildlife and Countryside Act - http://www.jncc.gov.uk/page-3614 is involved, compensation for impacts, e.g., loss of nesting sites, should be devised and implemented.

Species	Recommendations
West European hedgehog/ mammals	No further surveys required. Cautious working is advised to prevent killing or injury to this species during strimming, will full vigilance of the area to be strimmed/cut, and checks prior to undertaking the work to prevent hitting hedgehog/other animals. It must be remembered that some species will not move away from strimmers. Any excavations will include a plank (or be covered over) set at a shallow angle to allow animals to escape.
Invertebrates	No further surveys required. Where possible, translocation of heathland habitats will aid invertebrates by retaining less common (in the area) plants

Biodiversity enhancement

5.10 Local Authorities have a duty (known as the 'Biodiversity and resilience of ecosystems duty') under the Environment (Wales) Act 2016 to seek to maintain and *enhance* biodiversity in the exercise of their functions.

5.11 Where possible the existing onsite habitat will be retained to ensure that species are not adversely affected by the development. Native species of local provenance will be used for any new planting on the site to support The Action Plan for Pollinators in Wales, 2013 (http://gov.wales/docs/desh/publications/130723pollinator-action-plan-en.pdf).

5.12 Plug planting of heather and bracken/scrub management within appropriate areas will support heathland success and provide additional resources for a variety of invertebrates.

5.13 Other ideas for enhancement include the addition of bat and bird boxes (wooden boxes such as Kent style bat boxes, 32mm hole bird boxes, open fronted bird boxes) within wooded areas (away from paths to minimise vandalism) and formation of shallow scrapes/marshy areas in the area prone to flooding (both alleviating the issue and providing a biodiversity resource), with the margins planted with devil's bit scabious plugs and allowed to naturally colonise. Areas such as these may benefit from interpretation for local resident's information and engagement purposes.

Overall conclusion

5.14 Providing that the recommendations outlined within this report are successfully implemented, it should be possible for the proposed development to proceed and for there to be no long-term impacts upon the key protected species present at the site.

This ecological report will remain valid for a period of 18 months from the date of the last survey - i.e. until October 2020. Further surveys may be required to update the site information if planning is not obtained, the scope changes or works do not commence within this time period.

6 REFERENCES

Collins, J. (ed.) (2016) Bat surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

Chartered Institute of Ecology and Environmental Management (April, 2013) Guidelines for Preliminary Ecological Appraisal. CIEEM, Winchester.

Institute for Environmental Assessment (1995). Guidelines for Baseline Ecological Assessment. E & FN Spon, Hong Kong.

Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey; A technique for environmental audit. Reprinted by JNCC, Peterborough.

APPENDIX I: PEA PLANS

(shape files appended)

Key

Proposed route

Paths

Path

Habitats

A.1.1 Broad-leaved woodland, semi-natural

A.1.2 Coniferous woodland, plantation

A.2.1 Scrub, dense/continuous

A.4 Recently felled woodland

B.1 Acid grassland

B.2 Neutral grassland

C.1 Bracken

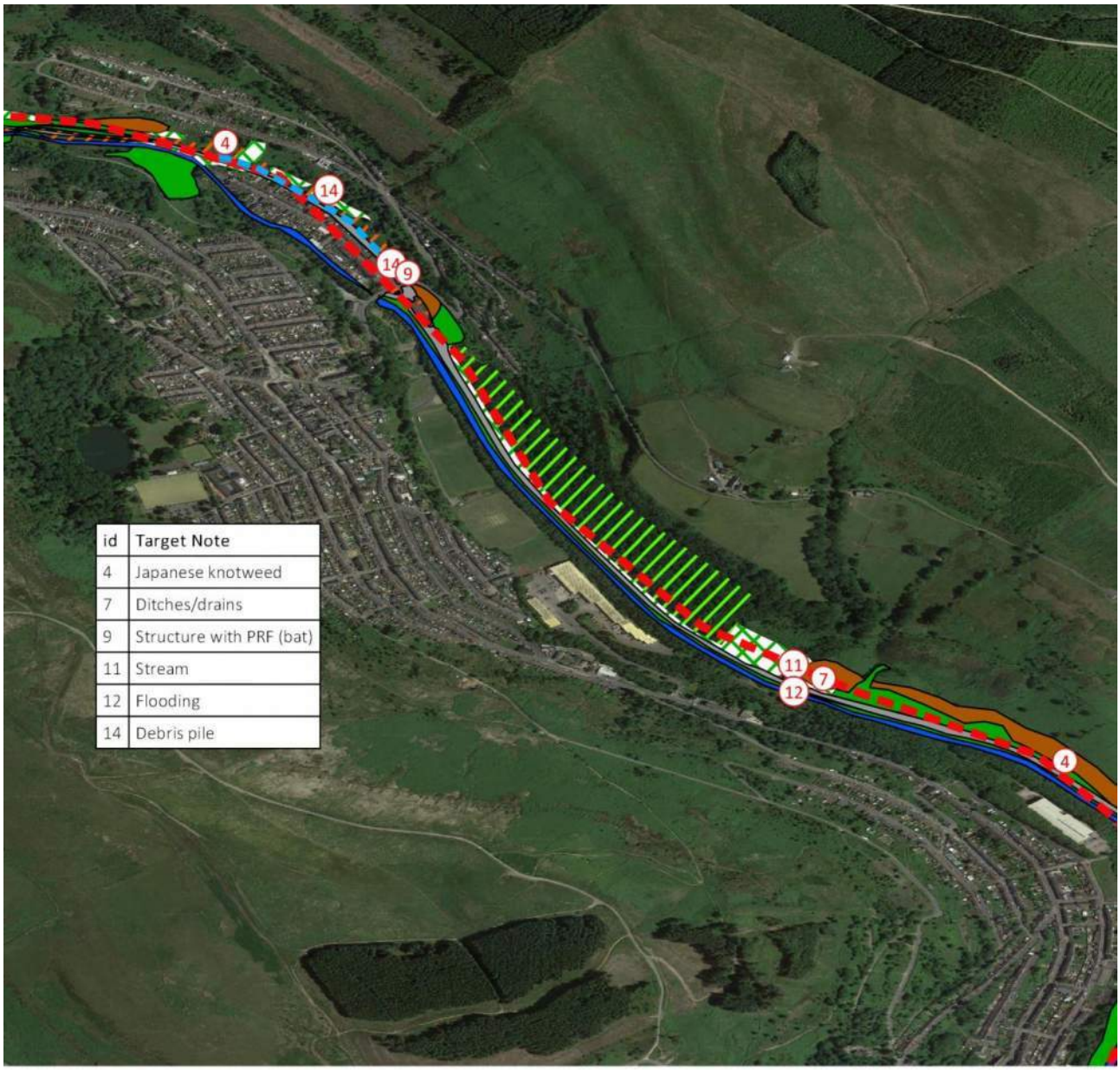
C.3.1 Tall ruderal

G.2 Running water

J.1.2 Amenity grassland

A.2.2 Scrub, scattered

Target Notes



id	Target Note
4	Japanese knotweed
7	Ditches/drains
9	Structure with PRF (bat)
11	Stream
12	Flooding
14	Debris pile

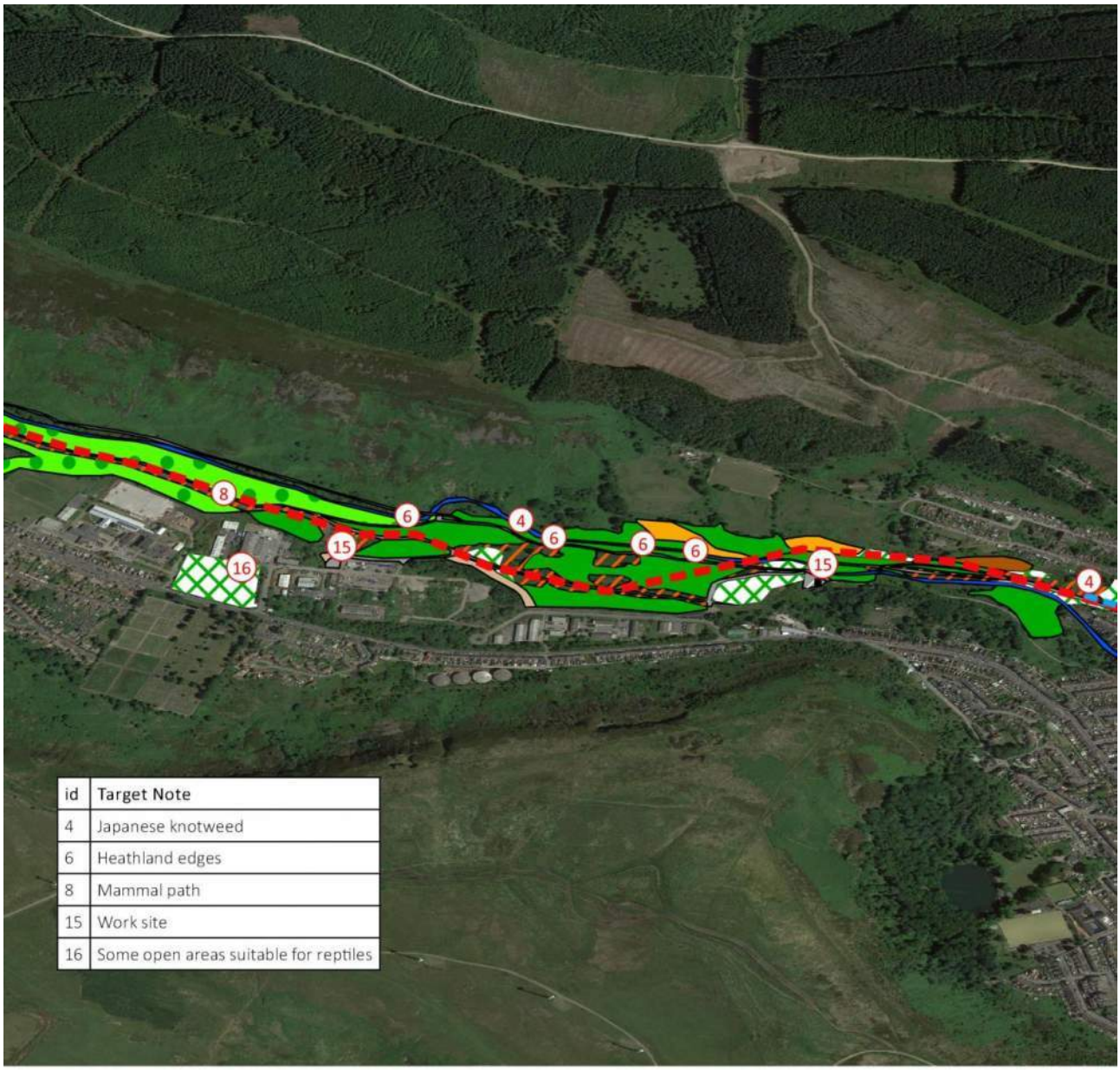
Key

Linear features
- Dry ditch
- Proposed route

Paths/buildings
- J.3.6 Buildings
- Path

Habitats
- A.1.1 Broad-leaved woodland, semi-natural
- A.1.2 Coniferous woodland, plantation
- A.2.1 Scrub, dense/continuous
- B.1 Acid grassland
- C.1 Bracken
- C.3.1 Tall ruderal
- G.2 Running water
- J.1.3 Ephemeral/short perennial
- A.2.2 Scrub, scattered

Target Notes



id	Target Note
4	Japanese knotweed
6	Heathland edges
8	Mammal path
15	Work site
16	Some open areas suitable for reptiles

Key

Linear features

Dry ditch

proposed route

Habitats

A.1.1 Broad-leaved woodland, semi-natural

A.1.3 Mixed woodland, semi-natural

A.2.1 Scrub, dense/continuous

B.1 Acid grassland

G.2 Running water

J.3.6 Buildings

Hard standing

C.1 Bracken

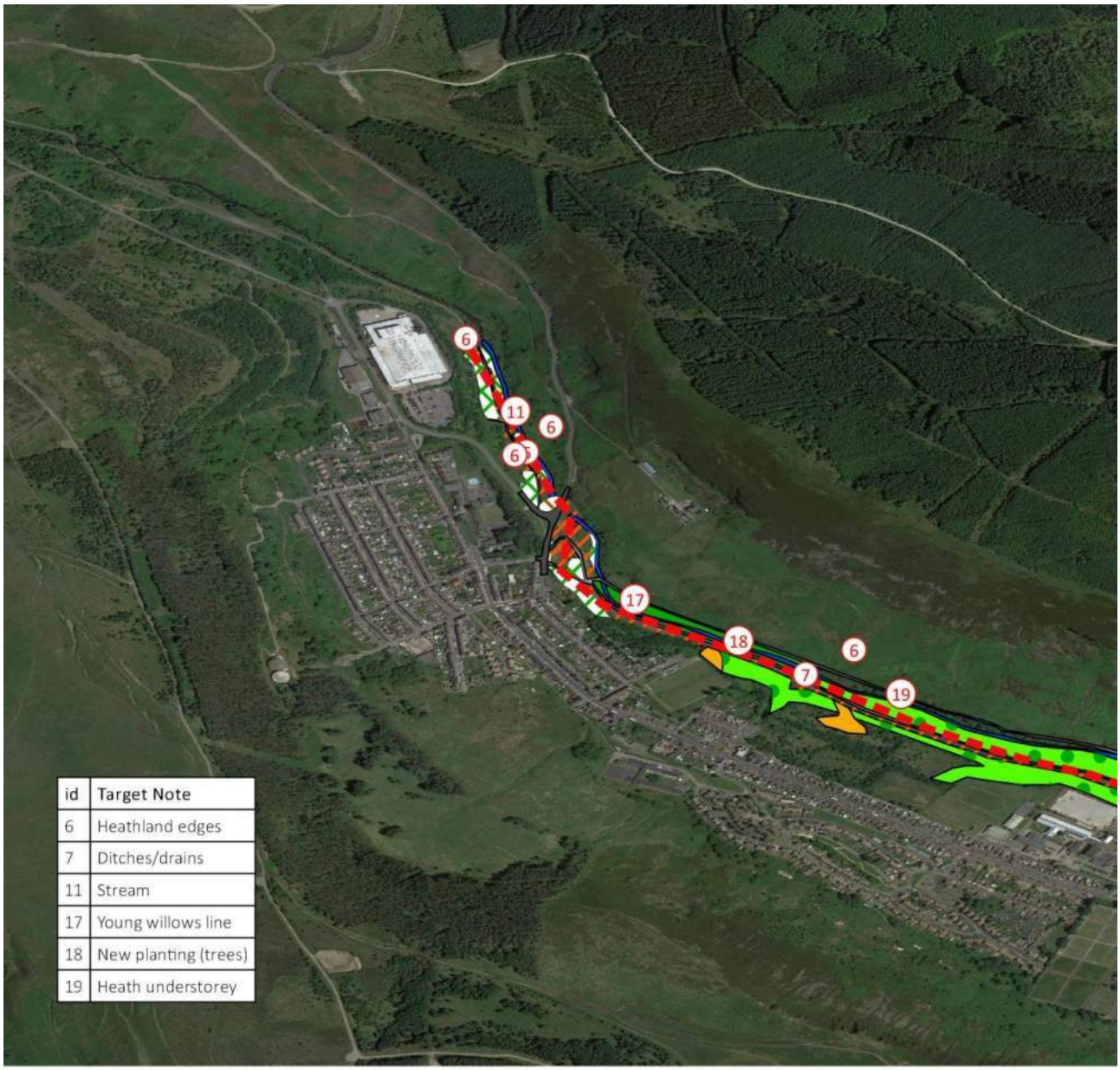
D.1 Dry dwarf shrub heath

J.1.3 Ephemeral/short perennial

J.4 Bare ground

Path

Target Notes



id	Target Note
6	Heathland edges
7	Ditches/drains
11	Stream
17	Young willows line
18	New planting (trees)
19	Heath understorey

Key

proposed route

Habitats

A.1.1 Broad-leaved woodland, semi-natural

A.1.3 Mixed woodland, semi-natural

A.2.1 Scrub, dense/continuous

B.1 Acid grassland

D.1 Dry dwarf shrub heath

G.2 Running water

C.3.1 Tall ruderal

Road

Path

Target Notes

APPENDIX II: IMAGES

Figure 2 – view towards river at southern end of site, within woodland, and on existing path

Figure 3 – view towards north at south end of site

Figure 4 – ditch and recently removed wooded area at south of site

Figure 5 – fast flowing inlet to river through woodland

Figure 6 – mammal path leading up bank and into scrub

Figure 7 – view from scrub where mammal path led, towards path

Figure 8 – view upstream at bridge towards southern end of site

Figure 9 – path running over bridge to east bank of river

Figure 10 – typical ground flora along eastern bank

Figure 11 – gravel path along eastern bank

Figure 12 – new concreted structure in path

Figure 13 – view offsite to east from path

Figure 14 – view to river from eastern bank

Figure 15 – exposed stone/cliff face on eastern edge of site

Figure 16 – wall in state of disrepair

Figure 17 – flooded section

Figure 18 – newer section of path running alongside forestry

Figure 19 – approaching road bridge

Figure 20 – under road bridge with bat features on wall top

Figure 21 – view northwards from bridge

Figure 22 – wall and habitat adjacent (east) to bridge

Figure 23 ditch running along eastern side of path. Note parked cars

Figure 24 – grassland area used by vehicles accessing the works site

Figure 25 – approach to works site and small footbridge

Figure 26 – footbridge over river

Figure 27 – heath with scrub encroachment on west of path

Figure 28 – heath and scrub below path (behind fence)

Figure 29 – scrub along path

Figure 30 – heather at northern end of site

Figure 31 – open slopes at northern end of site (east facing)

Figure 32 – view of valley from northern end

Figure 33 – new concrete drainage

APPENDIX III: PLANNING POLICY AND LEGISLATION

The following local and national planning policy and both primary and European legislation relating to nature conservation and biodiversity status are considered of relevance to the current proposal.

Planning and biodiversity

Local Authorities have a requirement to consider biodiversity and geological conservation issues when determining planning applications under the following planning policies.

Planning Policy Wales (2018) and Technical Advice Note 5 (2009)

Planning Policy Wales (Edition 10, December 2018) sets out the land use planning policies of the Welsh Government, in line with the Environment (Wales) Act 2016. The advice contained within Planning Policy Wales (PPW) is supplemented for some subjects by Technical Advice Notes (TAN's).

TAN 5 (Welsh Government, 2009) specifically provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. The TAN provides advice for local planning authorities on the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and development affecting protected and priority habitats and species.

Under Section 2.4 within the TAN 5, 'when deciding planning applications that may affect nature conservation local planning authorities should':

- Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;
- Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;
- Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;
- Ensure that appropriate weight is attached to designated sites of international, national and local importance;
- Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;
- Ensure that the range and population of protected species is sustained;
- Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered;

Legislation and biodiversity

Certain species of animals and plants found in the wild in the UK are legally protected from being harmed or disturbed. These species are listed in the Wildlife and Countryside Act 1981 (as amended) or are named as European Protected Species (EPS) in the Conservation of Habitats and Species Regulations 2017. These two main pieces of legislation have been consulted when writing this report and are therefore described in detail within this section.

Other relevant legislation and policy documents that have been consulted include – The Environment (Wales) Act 2016; The Countryside and Rights of Way Act 2000; The Hedgerow Regulations 1997; Biodiversity Action Plans, both UK-wide (UKBAP) and Local plans (LBAPs), and The National Planning Policy Framework (NPPF). There is also legislation that legally protects certain animals - for example, the Protection of Badgers Act (1992) protects badgers and their setts, and the Deer Act (1991) places restrictions on actions that can be taken against deer species.

Environment (Wales) Act 2016

Section 6 of the Act places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'. The duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty.

Public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience.

Section 7 replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

The Welsh Ministers must also 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.

Wildlife & Countryside Act 1981 (as amended)

The Wildlife & Countryside Act 1981 (as amended) [WCA] is the primary legislation for England and Wales for the protection of flora, fauna and the countryside. Part I within the Act deals with the protection of wildlife.

Most European Protected Species offences are now covered under the Conservation of Habitats and Species Regulations (see below), but some 'intentional' acts are still covered under the WCA, such as obstructing access to a bat roost.

The WCA prohibits the release to the wild of non-native animal species listed on Schedule 9 (e.g. Signal Crayfish and American Mink). It also prohibits planting in the wild of plants listed in Schedule 9 (e.g. Japanese Knotweed and Rhododendron ponticum) or otherwise deliberately causing them to grow in the wild. This is to prevent the release of invasive non-native species that could threaten our native wildlife.

The provisions relating to animals in the Act only apply to 'wild animals'; these are defined as those that are living wild or were living wild before being captured or killed. It does not apply to captive bred animals being held in captivity.

There are 'defences' provided by the WCA. These are cases where acts that would otherwise be prohibited by the legislation are permitted, such as the incidental result of a lawful operation which could not be reasonable avoided, or actions within the living areas of a dwelling house.

Licensing: certain prohibited actions under the Wildlife and Countryside Act may be undertaken under licence by the proper authority. For example scientific study that requires capturing or disturbing protected animals can be allowed by obtaining a licence – e.g. bat surveys.

Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 (which are the principal means by which the EC Habitats Directive is transposed in England and Wales) update the legislation and consolidate all the many amendments which have been made to the Regulations since they were first made in 1994.

These regulations provide for the:

- protection of European Protected Species [EPS] (animals and plants listed in Annex IV Habitats Directive which are resident in the wild in Great Britain) including bats, dormice, great crested newts, and otters;
- designation and protection of domestic and European Sites - e.g. Site of Special Scientific Interest [SSSI] and Special Area of Conservation [SAC]; and
- adaptation of planning controls for the protection of such sites and species.

Public bodies (including the Local Planning Authority) have a duty to have regard to the requirements of the Habitats Directive in exercising their function – i.e. when determining a planning application.

There is no defence that an act was the incidental and unavoidable result of a lawful activity.

Licensing: it is possible for actions which would otherwise be an offence under the Regulations to be undertaken under licence issued by the proper authority. For example, where a European Protected Species has been identified and the development risks deliberately affecting an EPS, then a 'development licence' may be required.

Species protection

The following protected species information is relevant to this report. Legislation is only discussed in relation to planning and development; other offences may exist.

Amphibians

The common frog, common toad, common newt, and palmate newt receive limited protection under the Wildlife and Countryside Act 1981 (as amended), making it illegal to sell or trade them.

The Great Crested Newt and Natterjack Toad are fully protected under the Conservation of Habitats and Species Regulations 2017 as European Protected Species. It is illegal to:

- Deliberately capture, injure, kill, or disturb either species,
- Intentionally or recklessly obstruct access to any structure/place used for shelter or protection, or
- Damage or destroy a breeding site or resting place.

Badger

Badgers are protected in the UK under the Protection of Badgers Act 1992. Under the act it is an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat[3] a Badger, or attempt to do so;

[3] The intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence by constituting "cruel ill treatment" of a Badger

- To intentionally or recklessly interfere with a sett[4] (this includes disturbing Badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain; it is not intended to prevent properly authorised development.

Bats

All British bats are classed as European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017, making it an offence inter alia to:

- Deliberately kill, injure or capture a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place of a bat.

In addition, all British bats are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which any bat uses for shelter or protection; or
- Disturb any bat while occupying a structure or place which it uses for that purpose.

If proposed development work is likely to destroy or disturb bats or their roosts, then a licence will need to be obtained from Natural Enlgand, which would be subject to appropriate measures to safeguard bats.

Birds

In the UK, the provisions of the Birds Directive are implemented through the Wildlife & Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2017. All wild birds, their nests and eggs are protected it an offence to:

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any such bird whilst it is in use or being built; or
- take or destroying an egg of any such wild bird.

The law covers all species of wild birds including common, pest or opportunistic species.

Special protection against disturbance during the breeding season is also afforded to those species listed on Schedule 1 of the Act.

-

Otters

The European Otter, *Lutra lutra* is a European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017, making it an offence inter alia to:

- deliberately capture, injure or kill any wild otter;
- deliberately disturb wild otters;
- damage or destroy a breeding site or resting place of an otter.

In addition, the otter is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

[4] A sett is defined as "any structure or place which displays signs indicating current use by a Badger". Advice issued by Natural England (June 2009) is that a sett is protected as long as such signs remain present, which in practice could potentially be for some time after the last actual occupation by Badger.

- disturbs an otter while it is occupying a structure or place which it uses for shelter or protection; or
- obstructs access to such a place.

If proposed development work is likely to destroy or disturb otters or their resting places, then a licence will need to be obtained from Natural Resource Wales, which would be subject to appropriate measures to safeguard otters.

Reptiles

Adders, slow worms, grass snakes and common lizards are protected against killing and injuring under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This legislation makes it illegal to intentionally kill or injure a common reptile. As a result, reptiles must be removed from areas of development and relocated onto suitable release sites before any site works can commence.

Smooth snakes and sand lizards are European Protected Species under schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017. This makes it illegal to carry out the following activities:

- Deliberately or recklessly disturb, capture or kill these animals;
- Deliberately or recklessly take or destroy eggs of these animals;
- Damage or destroy a breeding site or resting place of such a wild animal; or
- Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead animal, or any part of, or anything derived from such a wild animal

APPENDIX IV: BIODIVERSITY METHOD STATEMENT ACCEPTANCE FORM

All contractors working under this document will sign below to confirm that they have been briefed on the status of the construction area and its potential suitability for reptiles, and the actions to be taken if reptiles are encountered.

Failure to follow this Method Statement could result in a criminal offence being committed.

If in doubt please contact Wildwood Ecology (029 2002 2320) for advice at any time.

Company	Name	Signature	Date

APPENDIX V: ENHANCEMENT PROPOSAL