

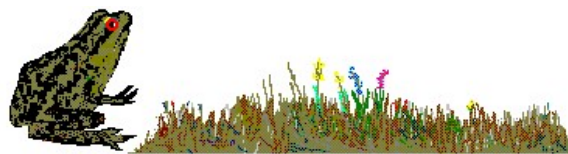


**Land at Collier's Row,
Heol Gerrig, Merthyr Tydfil**

**PRELIMINARY ECOLOGICAL
APPRAISAL**

Report issued: 2nd September 2019

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SUMMARY

1. Pryce Consultant Ecologists was commissioned in July 2019 to carry out a Preliminary Ecological Appraisal (PEA) of land at Colliers Row, Heol Gerrig, Merthyr Tydfil on which Maxiom Ltd is seeking planning permission to carry out a small residential development. The land which is the subject of this PEA is centred at OS grid ref. SO 0391 0625 and comprises of the survey site (outlined in blue on Figures 1 - 3), within which is the application site (outlined in red).
2. The site is currently mainly occupied by planted woodland and colonising scrub with adjacent horse-grazed, rather sparse grassland, all established on regraded colliery spoil. These are all secondary habitats which have become established since the c.1990s and, although capable of supporting nesting birds and other fauna, cannot be considered to be any more than of local significance.
3. The Merthyr Council Ecologist & Countryside Officer – Planning and Countryside has been consulted and commented as follows.

“The possible ecological issues on the site are likely to include (but not be limited to): bats roosting in trees and/or foraging and commuting across the site, nesting birds, reptiles, west European hedgehog.”
4. The South-East Wales Biodiversity Records Centre (SEWBRc) was consulted to procure existing site and species information from within a radius of 2km of the survey site. No protected or significant sites designated for their ecological interest are located within the survey site. The locations of such sites within the 2km area of search are shown on the SEWBRc maps reproduced at appendix 8. No such sites will be impacted by the proposed development. Records of protected species and species of conservation concern have been summarized at Tables 2.1 – 2.5, below.
5. The present survey and SEWBRc data indicate that the most significant impacts from the proposed development are likely to be limited to the potential for disturbance to **bats** (which are European Protected Species), **reptiles**, **terrestrial-phase amphibians** and **nesting birds** (which are protected to varying degrees by the Wildlife and Countryside Act 1981) and **Hedgehog** (a *Species of Principal Importance* listed under section 7 of the Environment (Wales) Act 2016. **Great Crested Newts** are known from the area but it is judged that, as the nearest recorded breeding ponds are greater than 500m distant from the survey site, the proposed development will not significantly impact this species.

The young age and generally etiolated conformation of most trees within the site present no, or only very limited potential for harbouring roosting bats. Furthermore, habitat with potential to attract reptiles and terrestrial-phase amphibians is judged to be limited to the edge habitat between the planted woodland and sparse grassland as shown on figure 3. There is also potential for Hedgehogs to seek refuge in this edge habitat.
6. The development of the site will result in the loss of cover, potential bird nesting sites, bird territories, faunal foraging resources and commuting routes for bats and other fauna within the application site but this loss is of low significance when viewed in the context of the extent of similar existing habitats that will remain in the vicinity.

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7. Three plant species of County Borough Importance were recorded during the survey. Only a single plant of one of these species, Spiked Sedge, is located within the application site and will need to be disturbed by the proposed development. It is proposed, at the commencement of the site clearance operation, to translocate this plant to a nearby safe site.
8. No other protected or significant species will be impacted by the development.
9. With the exception of a single small bush of possible Hollyberry Cotoneaster, no **Invasive Non-Native Species** will be disturbed during the development of the site. No Japanese Knotweed was observed within the survey site during the survey.
10. It is recommended that habitat piles constructed from arisings from tree and rank vegetation clearance work are constructed to provide potential refuges for fauna such as reptiles, amphibians and Hedgehogs. Hibernacula should also be constructed from any surplus rubble.
11. **Timing of Works.** Site operations should be carried out bearing due regard to the requirements of all flora and fauna, at the appropriate times of year, in order to comply with current legislation and best practice (see appendix 7). All vegetation clearance should be commenced outside the bird breeding season (March to August inclusive) and preferably during mid-September to the end of October to avoid disturbance to hibernating animals such as bats, reptiles and amphibians. If it is unavoidable that vegetation clearance commences within the nesting season, immediately prior to the commencement of such works, areas to be cleared must be examined by a qualified ornithologist. The commencement of the clearance work will only be permitted if the ornithologist judges that the area does not support any nests. Failure to protect active nests is in breach of current legislation and could result in prosecution.

A suitable timetable for works should be designed to comply with all ecological constraints and requirements.
12. **Mitigation** of habitat loss may be achieved by the provision of bird nesting and bat roost features in the fabric of houses to be constructed on the site. This, associated with appropriate landscape and garden plantings, will reduce the impact on bats, birds and other fauna.
13. **Landscape plantings** should seek to provide habitat connectivity linking habitats surrounding the site. Where possible, trees and dense hedges should be retained, maintained or planted around the site margins and between new properties to connect existing woodlands to the south and along the edge of the A470 with existing habitats to the west and gardens to the north and north-east.

All new plantings should be of species appropriate to preserve the character of the local landscape. Where native species are planted, in order to ensure that they are compatible with the local gene pool of the area, they should be of local provenance as outlined in Forest Practice Note No. 8, *Using Local Seed Sources for Planting Native Trees and Shrubs* (Forestry Commission, 1999).

In order to provide faunal feeding opportunities, plantings should include berry and seed-bearing trees and shrubs such as Hawthorn, Hazel, Alder Buckthorn, Crab Apple, Guelder Rose, Rowan and Elder. Native species of trees and shrubs (including non berry-bearing species) generally have higher invertebrate productivity than alien species, thus resulting in a richer environment for birds and other fauna.

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Existing vegetation and new plantings should not be over-managed and species such as Ivy, Bramble, willow and Gorse should be allowed to grow, as these also provide good food sources and cover for nesting birds and other fauna.

14. A landscape plan incorporating an appropriate ecological mitigation strategy and plan should be drafted as the scheme is progressed.
15. There should be input from a qualified ecologist at all stages of the project.
16. Careful planning and supervision of site personnel must seek to ensure that disturbance to all existing habitats and species is kept to an absolute minimum.
17. All site personnel must be made familiar with the ecological requirements of the site at induction courses and tool-box talks.
18. Attention is drawn to all additional recommendations made at section 5 and at appendices 5 and 6 of this report.
19. No other significant ecological issues were identified during the assessment.

20. **Future Site Maintenance**

Following the completion of the construction phase, future maintenance of the site should bear due regard to the well-being of all habitats, flora and fauna and only employ best-practice.

All maintenance works must be undertaken at times appropriate to avoid unnecessary disturbance, for example, to avoid the bird nesting season and to minimize disturbance to hibernating animals.

Lopping of trees and cutting of vegetation should not be over-aggressive and it should be borne in mind that species such as Ivy, Gorse, willow and Bramble are very important habitats for many species.

The frequent cutting of grass verges without removing the arisings invariably results in their decline in ecological value due to soil enrichment causing a considerable reduction in species-diversity. Arisings from grass cutting should therefore always be removed.

Management practices and prescriptions should be conveyed to the maintenance staff or contractors who carry out such routine maintenance, on every occasion that work is undertaken.

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1. INTRODUCTION

Pryce Consultant Ecologists was commissioned in July 2019 to carry out a Preliminary Ecological Appraisal of land at Colliers Row, Heol Gerrig, Merthyr Tydfil on which Maxiom Ltd is seeking planning permission to carry out a small residential development.

At present, the site is primarily occupied by planted woodland and colonising scrub with adjacent horse-grazed, rather sparse grassland, all established on regraded colliery spoil.

On 8th August 2019, Richard Pryce assessed the habitats and vegetation of the land within the red line shown on figure 1 (the application site) and additional adjacent land, principally that contained within the blue line on figure 1. The survey was based upon standard Phase 1 Habitat Survey methodology (Nature Conservancy Council, 1990) whilst also seeking and noting faunal observations and potential faunal habitat.

The Merthyr Council Ecologist & Countryside Officer – Planning and Countryside was consulted at the pre-application stage on 12th August 2019 and advised that, in compliance with standard Preliminary Ecological Appraisal (PEA) guidelines (CIEEM, 2017), the Local Biological Records Centre (SEWBRc) should be consulted to procure data that may be relevant to the appraisal. He also commented as follows:

“The possible ecological issues on the site are likely to include (but not be limited to): bats roosting in trees and/or foraging and commuting across the site, nesting birds, reptiles, west European hedgehog.”

The present report sets out the findings of the survey and assesses the potential impact of the proposed development upon existing ecological features.

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2. DESK STUDY and PHASE 1 HABITAT SURVEY

2.1 Survey Objectives

The survey was commissioned to identify any impacts that the proposed development might have upon habitats and/or protected species or species of significance and to identify any constraints that may be imposed by ecological issues.

The approximate centre of the area surveyed is located at O.S. grid ref. SO03910625 and its boundaries are shown on figure 1. The red line delineates the application site and the blue line the approximate extent of the survey.

2.2 Context and Third-Party Information

2.2.1 The County's Planning Ecologist's comments and requirements are reproduced in section 1, above.

2.2.2 Reference was made to old Ordnance Survey maps of the area.

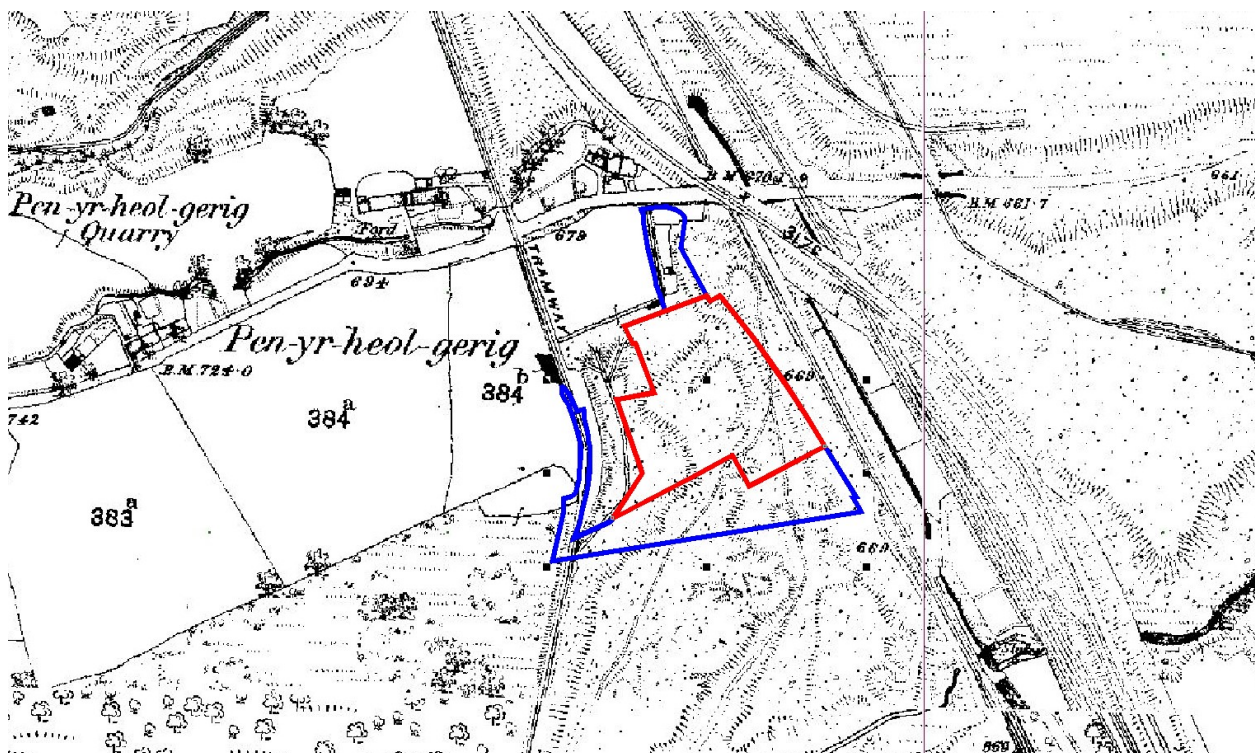


Figure 1. First Edition O.S. 25 inch to 1 mile map c1843-1893

Application site boundary shown by the red line, extent of survey site by the blue line

The first edition O.S. 25 inch to 1 mile map surveyed between c.1843 and 1893 (figure 1) shows the survey site to be entirely occupied by colliery spoil tips with a tramway running approximately north-south along the western boundary. Subsequent historic maps show the growth of housing along Heol Gerrig to the north and north-west of the site but there was little change within the site until the spoil was regraded and planted with trees in the c.1990s.

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- 2.2.3 Reference was also made to the Countryside Council for Wales Phase 1 Habitat Survey maps surveyed in about 1990 and to CCW statutory protected site citations. The CCW Phase 1 map shows the survey site to be mainly occupied by plantation woodland with an area of spoil in the north-eastern section and an area of neutral grassland in the south.
- 2.2.4 The South-East Wales Biodiversity Records Centre (SEWBrEC) was consulted to procure protected and significant site information and past records of protected and significant floral and faunal species from within a radius of 2km of the central point of the survey site taken to be SO03910625. The locations of protected and significant sites, habitats and species are shown on the SEWBrEC maps (see appendix 8) and the data received have been summarized in the paragraphs below.
- 2.2.5 There are no protected sites of European significance located within the survey site or within at least 5km. Such sites include, for example, Special Areas of Conservation (SAC) and Special Protection Areas (SPA).
- 2.2.6 There are no statutory protected sites of national significance notified as Sites of Special Scientific Interest (SSSI) under the Wildlife and Countryside Act 1981 located within the survey site but the following are located within 2km.
- Cwm Glo a Glandyrys SSSI: an extensive area of unimproved grasslands, woodlands and habitats developed on colliery spoil, the closest point of which is located some 150m to the south of the survey site. The location and extent of this SSSI is shown on the map provided by SEWBrEC reproduced at appendix 8.
 - Cwm Taf Fechan Woodlands SSSI located about 1.25km to the north which is shown on the map provided by SEWBrEC reproduced at appendix 8.
- Other SSSIs in the area include
- Penmoelallt SSSI located about 3km to the north-west
 - Bryncarnau Grasslands Llwydcoed SSSI, located some 3.5km to the west
- 2.2.7 The lower part of the Taf Fechan Woodlands SSSI closest to the town is also designated as a statutory Local Nature Reserve, is managed by Merthyr Tydfil County Borough Council and is located about 1.25km to the north of the survey site.
- 2.2.8 Most of the northern part of the Taf Fechan Woodlands SSSI is managed as a Nature Reserve by the Wildlife Trust of South and West Wales and is located just under 2km to the north of the survey site.
- 2.2.9 Merthyr Tydfil County Borough Council have identified a series of Sites of Importance for Nature Conservation (SINC) (also known as Wildlife Sites). The following SINC lie within about 2km of the survey site and are shown on the SEWBrEC map at appendix 8.
- Afon Taf, the closest point of which is about 0.5km north of the survey site
 - Blaen-Canaid, the closest point of which is about 1.2km south of the survey site
 - Coed Meirig Pastures, the closest point of which is about 1.8km north-west of the survey site
 - Cwm Ffrwd, the closest point of which is about 1.6km north-west of the survey site
 - Cwm Glo, the closest point of which is about 100m south of the survey site
 - Cwm Taf Fawr, the closest point of which is about 1km north of the survey site
 - Cwm Taf Fechan, the closest point of which is about 2km north of the survey site
-

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- Cwm Taf Fields & Cefn Coed Tip, the closest point of which is about 0.5km north of the survey site
- Cyfarthfa Park, the closest point of which is about 1.1km north-east of the survey site
- Gellideg North Fields, the closest point of which is about 1.5km north-west of the survey site
- Rhydycar West, the closest point of which is about 0.8km south of the survey site
- Winchfawr East & Clwydfagwyr, the closest point of which is about 1km west-northwest of the survey site
- Winchfawr West, the closest point of which is about 1.3km WSW of the survey site
- Y Graig, the closest point of which is about 1.5km north of the survey site

2.2.10 Areas of designated ancient semi-natural woodland located within 2km of the survey site include nine woods identified as Ancient Semi Natural Woodlands (ASNW) totalling 15ha mostly located near the southern edge of the search area and three Restored Ancient Woodland Sites (RAWS) totalling 18ha in the northern part of the search area. These are shown on the map provided by SEWBRc reproduced at appendix 8. Small areas of Plantation on Ancient Woodland Sites (PAWS) and Ancient Woodland Sites of Unknown Category (AWSU) have been identified at the southern edge of the search area.

2.2.11 There are large areas of open access land located to the west and south-west of the survey site, much of which comprise of historic, mined patch workings with extensive areas of associated spoil tips and occasional ponds. These are often of considerable wildlife interest and parts are included in the Cwm Glo a Glandyrys SSSI. The closest areas include Cwm Glo, about 1km to the south-west, and areas extending to Winch Fawr and Heol Gerrig about 2km to the west and 1km to the north-west respectively.

2.2.12 Nant Ffrwyd, located about 1.5km north-west of the survey site, is designated as a Regionally Important Geological Site (RIGS).

2.2.13 European Protected Species, nationally protected species, *Species of Principal Importance for Conservation of Biological Diversity* listed under section 7 of the Environment (Wales) Act 2016 and other species of significance procured from SEWBRc are listed at Tables 2.1 to 2.5, below. Also shown is the closest distance (in metres) that the species has been recorded from the centre of the survey site (taken to be SO03910625) together with the date of that record. The date of the latest record is also shown which invariably refers to a location more distant than the closest record. No account has been taken of records apparently duplicated in the dataset, for example the 39 entries for Marsh Fritillary butterfly may refer to only about 10 or 12 separate records.

Species for which no suitable habitat is present within the survey site or which are considered to be highly unlikely to visit or occur within the site are included in the lists but are greyed-out.

It should be pointed out that protected and other significant species additional to those held on the SEWBRc database are likely to occur within, or visit the survey site and its vicinity. Therefore, the absence of a species in the tables does not necessarily imply that that particular species does not occur in, or visit the area.

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KEY TO DESIGNATIONS IN TABLES 2.1 – 2.5

- BA = Protection of Badgers Act
UKBAP = UK Biodiversity Action Plan Priority Species
BDir1 = EC Birds Directive Annex 1 Species
BDir21 = EC Birds Directive Annex 2.1 Species
BDir22 = EC Birds Directive Annex 2.2 Species
CITES = Convention on International Trade in Endangered Species
EPS = European Protected Species
HDir = EU Habitats Directive Species
NRW = Natural Resources Wales Priority Species
RD1 (Wales) = Welsh Red Data Book listing based on IUCN guidelines
RD1 (UK) = UK Red Data Book listing based on IUCN guidelines
RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce)
WBR (RSPB) = RSPB Welsh Red listed birds (not based on IUCN criteria)
WBAm (RSPB) = RSPB Welsh Amber listed birds (not based on IUCN criteria)
UKBR (RSPB) = RSPB UK Red listed birds (not based on IUCN criteria)
UKBAm (RSPB) = RSPB UK Amber listed birds (not based on IUCN criteria)
S7 = *Species of Principal Importance for Conservation of Biological Diversity* listed under section 7 of the Environment (Wales) Act 2016
WCA1.1 = Bird species listed under Schedule 1 Part 1 of the Wildlife and Countryside Act 1981 as amended
WCA5 = Species listed under Schedule 5 of the Wildlife and Countryside Act 1981 as amended
WCA8 = Plant species listed under Schedule 8 of the Wildlife and Countryside Act 1981 as amended
WCA9 = Species listed under Schedule 9 of the Wildlife and Countryside Act 1981 as amended
INNS = Invasive Non-Native Species
WVP = IUCN Threat Listing of Welsh Vascular Plants
LBAP (MTR) = Merthyr Tydfil County Borough Local Biodiversity Action Plan Species
LI (SEWBRc) = Locally Important Species (as identified by local specialists) in SEWBRc area.
LI (VC41, LR) = Locally Important Species (as identified by local specialists) in Glamorgan, Locally Rare in vice county.
LI (VC41, EX) = Locally Important Species (as identified by local specialists) in Glamorgan, Extinct in vice county.

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TABLE 2.1.
EUROPEAN PROTECTED SPECIES

Closest record to centre of site (m)	No. of records in area of search	Date of record closest to site	Most recent record in area of search	Taxonomic Group	Common Name	Scientific Name	Designations
637	87	1966	18-Apr-14	amphib	Great Crested Newt	<i>Triturus cristatus</i>	EPS, HDir, WCA5, S7, UKBAP,
637	33	10-Jul-90	25-Jul-15	bat	Bats	Chiroptera	EPS, WCA5, S7,
781	6	15-Jul-13	15-Jul-13	bat	Brown Long-eared Bat	<i>Plecotus auritus</i>	EPS, HDir, WCA5, S7, UKBAP,
573	62	03-Mar-09	16-May-16	bat	Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	EPS, WCA5,
1104	21	Aug-01	29-Sep-10	bat	Daubenton's Bat	<i>Myotis daubentonii</i>	EPS, HDir, WCA5,
1639	20	08-Sep-10	11-Jan-17	bat	Lesser Horseshoe Bat	<i>Rhinolophus hipposideros</i>	EPS, HDir, WCA5,
1239	3	20-Sep-11	20-Sep-11	bat	Long-eared Bat species	<i>Plecotus</i>	EPS, HDir, WCA5,
1309	13	01-Sep-10	16-Sep-10	bat	Natterer's Bat	<i>Myotis nattereri</i>	EPS, HDir, WCA5,
1117	19	12-Jul-16	29-Mar-19	bat	Pipistrelle	<i>Pipistrellus pipistrellus</i> agg.	EPS, WCA5,
2148	1	03-Sep-15	03-Sep-15	bat	Serotine	<i>Eptesicus serotinus</i>	EPS, HDir, WCA5,
761	38	15-Jul-13	15-Jun-16	bat	Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	EPS, HDir, WCA5, S7,
1176	29	03-Sep-07	18-Jul-13	bat	Unidentified Myotis Bat	<i>Myotis</i>	EPS, HDir, WCA5,
856	39	2000	1978-2001	butterfly	Marsh Fritillary	<i>Euphydryas aurinia</i>	EPS, HDir, WCA5, S7, UKBAP, RD1 (UK), RD2 (UK), LI(SEWBRcC)
687	20	Aug-07	Jul-09	fish	Atlantic Salmon	<i>Salmo salar</i>	EPS, HDir, S7, UKBAP, RD2 (UK),
538	35	1992	Sep-10	mammal	European Otter	<i>Lutra lutra</i>	EPS, HDir, WCA5, S7, UKBAP, CITES, RD1 (UK), RD2 (UK),

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Land at Collier's Row, Heol Gerrig, Merthyr Tydfil: Preliminary Ecological Appraisal**TABLE 2.2. NATIONALLY PROTECTED SPECIES ADDITIONAL TO ABOVE**

Closest record to centre of site (m)	No. of records in area of search	Date of record closest to site	Most recent record in area of search	Taxonomic Group	Common Name	Scientific Name	Designations
514	26	09-Jul-97	08-Aug-17	amphib	Common Frog	<i>Rana temporaria</i>	HDir, WCA5,
1320	11	12-Sep-07	31-Aug-15	amphib	Common Toad	<i>Bufo bufo</i>	WCA5, S7, UKBAP,
1091	6	14-May-09	15-May-13	amphib	Palmate Newt	<i>Lissotriton helveticus</i>	WCA5,
1109	3	24-Jun-15	15-Jun-16	bat	Noctule Bat	<i>Nyctalus noctula</i>	WCA5, S7,
1642	14	07-Jun-91	29-Jun-18	bird	Barn Owl	<i>Tyto alba</i>	WCA1.1, UKBAm(RSPB)
1799	1	Jan-09	Jan-09	bird	Brambling	<i>Fringilla montifringilla</i>	WCA1.1,
856	12	14-May-12	23-Oct-15	bird	Common Crossbill	<i>Loxia curvirostra</i>	WCA1.1,
1315	1	1950-54	1950-54	bird	Comcrake	<i>Crex crex</i>	BDir1, WCA1.1, S7, UKBAP, WBR(RSPB), UKBR(RSPB)
1596	7	02-Feb-07	12-Mar-15	bird	Fieldfare	<i>Turdus pilaris</i>	WCA1.1, WBAm(RSPB), UKBR(RSPB), UKBAm(RSPB)
1380	1	15-Dec-95	15-Dec-95	bird	Goldeneye	<i>Bucephala clangula</i>	BDir22, WCA1.2, UKBAm(RSPB)
1149	10	25-Sep-16	25-Sep-16	bird	Goshawk	<i>Accipiter gentilis</i>	WCA1.1, CITES,
1226	3	1963	28-Jul-04	bird	Green Sandpiper	<i>Tringa ochropus</i>	WCA1.1, UKBAm(RSPB)
637	1	17-Aug-18	17-Aug-18	bird	Hobby	<i>Falco subbuteo</i>	WCA1.1, CITES, WBAm(RSPB),
1315	4	11-Oct-12	25-Jan-06	bird	Kingfisher	<i>Alcedo atthis</i>	BDir1, WCA1.1, WBAm(RSPB), UKBAm(RSPB)
480	6	23-May-10	11-Mar-15	bird	Peregrine	<i>Falco peregrinus</i>	BDir1, WCA1.1, CITES, UKBAm(RSPB)
637	10	14-Feb-10	02-Mar-17	bird	Red Kite	<i>Milvus milvus</i>	BDir1, WCA1.1, CITES, RD1 (UK), WBAm(RSPB), UKBAm(RSPB)
637	28	06-Jan-05	12-Nov-17	bird	Redwing	<i>Turdus iliacus</i>	BDir22, WCA1.1, WBAm(RSPB), UKBR(RSPB), UKBAm(RSPB)
1814	1	1963	1963	bird	Snow Bunting	<i>Plectrophenax nivalis</i>	WCA1.1, WBAm(RSPB), UKBAm(RSPB)
637	1	1900-1927	1900-1927	butterfly	Pearl-bordered Fritillary	<i>Boloria euphrosyne</i>	WCA5, S7, UKBAP, RD1 (UK), RD2 (UK), LI(SEWBRcC),
1603	1	02-Jun-70	02-Jun-70	butterfly	Small Blue	<i>Cupido minimus</i>	WCA5, S7, UKBAP, RD1 (UK), LI(SEWBRcC)
1200	1	20-Oct-09	20-Oct-09	butterfly	White-letter Hairstreak	<i>Satyrion w-album</i>	WCA5, S7, UKBAP, RD1 (UK), RD2 (UK), LI(SEWBRcC)
2653	2	21-May-77	27-Mar-12	reptile	Common Lizard	<i>Zootoca vivipara</i>	WCA5, S7, UKBAP,
772	5	15-Jun-93	08-Aug-94	reptile	Grass Snake	<i>Natrix helvetica</i>	WCA5, S7,
1335	3	30-Aug-16	30-Aug-16	reptile	Slow-worm	<i>Anguis fragilis</i>	WCA5, S7, UKBAP,
839	4	Sep-07	18-Nov-10	mammal	Eurasian Badger	<i>Meles meles</i>	BA,
1380	1	Jul-73	Jul-73	mammal	Eurasian Red Squirrel	<i>Sciurus vulgaris</i>	WCA5, S7, UKBAP,
839	3	Sep-07	Sep-07	mammal	European Water Vole	<i>Arvicola amphibius</i>	WCA5, S7, UKBAP,
432	6	22-Apr-97	22-May-18	vasc.plant	Bluebell	<i>Hyacinthoides non-scripta</i>	WCA8,

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Land at Collier's Row, Heol Gerrig, Merthyr Tydfil: Preliminary Ecological Appraisal**TABLE 2.3.****SECTION 7 SPECIES OF PRINCIPAL IMPORTANCE AND UK BIODIVERSITY ACTION PLAN SPECIES, NRW PRIORITY SPECIES AND RSPB RED LIST SPECIES ADDITIONAL TO ABOVE**

Closest record to centre of site (m)	No. of records in area of search	Date of record closest to site	Most recent record in area of search	Taxonomic Group	Common Name	Scientific Name	Designations
1090	1	1979	1979	beetle	Violet Oil-beetle	<i>Meloe violaceus</i>	S7, UKBAP, RD2 (UK)
637	14	19-Jan-10	Jan-17	bird	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	BDir22, S7, WBR(RSPB), UKBAm(RSPB)
839	66	Sep-07	25-Apr-16	bird	Bullfinch	<i>Pyrrhula pyrrhula</i>	S7, UKBAP, WBR(RSPB), UKBR(RSPB)
655	9	17-Apr-11	09-Jun-12	bird	Cuckoo	<i>Cuculus canorus</i>	S7, UKBAP, WBR(RSPB), UKBR(RSPB), UKBAm(RSPB)
375	58	Jan-09	10-Jan-18	bird	Dunnock	<i>Prunella modularis</i>	S7, UKBAP, UKBAm(RSPB)
856	7	26-May-12	28-Jul-15	bird	Grasshopper Warbler	<i>Locustella naevia</i>	S7, UKBAP, WBR(RSPB), UKBR(RSPB)
1448	6	14-Sep-14	14-Sep-14	bird	Hen Harrier	<i>Circus cyaneus</i>	BDir1, S7, CITES, WBR(RSPB), UKBR(RSPB)
117	136	Jan-08	10-Jun-17	bird	House Sparrow	<i>Passer domesticus</i>	S7, UKBAP, WBAm(RSPB), UKBR(RSPB)
2520	2	13-Apr-02	20-Jun-02	bird	Lapwing	<i>Vanellus vanellus</i>	BDir22, S7, UKBAP, WBR(RSPB), UKBAm(RSPB)
856	16	24-Jun-03	25-May-12	bird	Lesser Redpoll	<i>Acanthis cabaret</i>	S7, UKBAP, WBR(RSPB), UKBAm(RSPB)
1315	2	05-Apr-95	05-Apr-95	bird	Lesser Spotted Woodpecker	<i>Dendrocopos minor</i>	S7, UKBAP, WBR(RSPB), UKBR(RSPB)
406	21	30-Jun-03	14-Sep-14	bird	Linnet	<i>Linaria cannabina</i>	S7, WBR(RSPB), UKBR(RSPB)
953	2	May-97	May-97	bird	Marsh Tit	<i>Poecile palustris</i>	S7, UKBAP, WBR(RSPB), UKBR(RSPB)
856	7	22-May-15	02-Jun-16	bird	Nightjar	<i>Caprimulgus europaeus</i>	BDir1, S7, UKBAP, WBAm(RSPB), UKBR(RSPB)
953	1	May-97	May-97	bird	Pied Flycatcher	<i>Ficedula hypoleuca</i>	S7, WBR(RSPB), UKBR(RSPB)
406	11	30-Jun-03	14-Sep-14	bird	Reed Bunting	<i>Emberiza schoeniclus</i>	S7, UKBAP, WBAm(RSPB), UKBR(RSPB)
1430	7	12-Apr-05	14-May-12	bird	Skylark	<i>Alauda arvensis</i>	BDir22, S7, WBAm(RSPB), UKBR(RSPB)
760	73	Jan-09	10-Jan-18	bird	Song Thrush	<i>Turdus philomelos</i>	BDir22, S7, UKBAP, WBAm(RSPB), UKBR(RSPB)
2247	1	22-Aug-06	22-Aug-06	bird	Spotted Flycatcher	<i>Muscicapa striata</i>	S7, UKBAP, WBR(RSPB), UKBR(RSPB)
189	68	Jan-08	12-Apr-18	bird	Starling	<i>Sturnus vulgaris</i>	BDir22, S7, UKBAP, WBR(RSPB), UKBR(RSPB)
856	10	24-Jun-03	14-May-15	bird	Tree Pipit	<i>Anthus trivialis</i>	S7, UKBAP, WBAm(RSPB), UKBR(RSPB), UKBAm(RSPB)
1846	3	17-Feb-05	07-Dec-15	bird	Willow Tit	<i>Poecile montana</i>	S7, UKBAP, WBR(RSPB), UKBR(RSPB)

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Closest record to centre of site (m)	No. of records in area of search	Date of record closest to site	Most recent record in area of search	Taxon-omic Group	Common Name	Scientific Name	Designations
856	6	14-May-12	16-May-18	bird	Wood Warbler	<i>Phylloscopus sibilatrix</i>	S7, UKBAP, WBR(RSPB), UKBAm(RSPB)
210	8	06-Jun-05	06-Jun-05	butterfly	Dingy Skipper	<i>Erynnis tages</i>	S7, UKBAP, RD1 (UK), LI(SEWBRcC)
1846	7	1997	17-Aug-07	butterfly	Grayling	<i>Hipparchia semele</i>	S7, UKBAP, RD1 (UK), LI(SEWBRcC),
856	18	1900-1927	28-Jun-07	butterfly	Small Pearl-bordered Fritillary	<i>Boloria selene</i>	S7, UKBAP, RD1 (UK), LBAP (MTR), LI(SEWBRcC),
687	20	Aug-07	Aug-07	fish	Brown/Sea Trout	<i>Salmo trutta</i>	S7, UKBAP, LBAP (MTR),
732	1	01-Nov-06	01-Nov-06	fungus	Big Blue Pinkgill	<i>Entoloma bloxamii</i>	S7, UKBAP
546	4	31-Oct-06	31-Oct-06	fungus	Dark-Purple Earthtongue	<i>Geoglossum atropurpureum</i>	S7, UKBAP,
1267	2	30-Oct-06	31-Oct-06	fungus	Olive Earthtongue (2)	<i>Microglossum olivaceum</i>	S7, UKBAP,
1267	2	07-Oct-06	07-Oct-06	fungus	Violaceous Fairy Club	<i>Clavaria zollingeri</i>	S7,
1899	2	01-Jul-12	01-Jul-12	lycopod	Stag's-horn Clubmoss	<i>Lycopodium clavatum</i>	HDir, S7, CITES, RD1 (UK),
2247	1	19-Jun-13	19-Jun-13	moth	Grass Rivulet	<i>Perizoma albulata</i>	S7, UKBAP,
637	2	1900	1900	moth	Narrow-bordered Bee Hawk-moth	<i>Hemaris tityus</i>	S7, UKBAP, RD2 (UK),
637	5	26-Oct-06	16-Nov-07	moth	Sword-grass	<i>Xylota exsoleta</i>	S7, UKBAP, RD2 (UK),
1772	3	22-Apr-04	22-Apr-04	mammal	Brown Hare	<i>Lepus europaeus</i>	S7, UKBAP,
2044	4	27-Apr-97	Jan 1972	mammal	Polecat	<i>Mustela putorius</i>	HDir, S7, UKBAP, RD2 (UK),
1720	1	17-Jun-03	17-Jun-03	mammal	Stoat	<i>Mustela erminea</i>	NRW,
480	19	2006	2018	mammal	West European Hedgehog	<i>Erinaceus europaeus</i>	S7, UKBAP,
714	3	Aug-94	Sep-07	vasc.plant	an eyebright	<i>Euphrasia officinalis ssp.pratensis</i>	S7, UKBAP, LI(SEWBREC)
689	2	24-Jul-02	24-Jul-02	vasc.plant	Small-flowered Sticky Eyebright	<i>Euphrasia officinalis ssp.anglica</i>	S7, UKBAP, RD1 (UK), LI(SEWBRcC), WVP
801	1	07-Jul-10	07-Jul-10	vasc.plant	Lesser Butterfly-orchid	<i>Platanthera bifolia</i>	S7, UKBAP, RD1 (UK),
2653	1	21-May-77	21-May-77	vasc.plant	Ley's Whitebeam	<i>Sorbus leyana</i>	S7, UKBAP, RD1 (UK), RD2 (UK),

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Land at Collier's Row, Heol Gerrig, Merthyr Tydfil: Preliminary Ecological Appraisal**TABLE 2.4.****RSPB AMBER LIST SPECIES, RED DATA LIST AND MERTHYR TYDFIL LOCAL BIODIVERSITY ACTION PLAN SPECIES ADDITIONAL TO ABOVE**

Closest record to centre of site (m)	No. of records in area of search	Date of record closest to site	Most recent record in area of search	Taxon-omic Group	Common Name	Scientific Name	Designations
1846	2	1997	Jun-97	beetle	Barley Flea Beetle	<i>Phyllotreta vittula</i>	RD2 (UK)
1599	1	09-Jun-16	09-Jun-16	beetle	Black-headed Cardinal Beetle	<i>Pyrochroa coccinea</i>	RD2 (UK)
342	1	05-Aug-95	05-Aug-95	beetle	Common Whirligig-beetle	<i>Gyrinus natator</i>	RD1 (UK)
1846	2	1997	Jun-97	beetle	Chaetarthria seminulum	<i>Chaetarthria seminulum</i>	RD2 (UK)
2418	1	17-Jun-03	17-Jun-03	beetle	Ctenicera pectinicornis	<i>Ctenicera pectinicornis</i>	RD2 (UK)
1846	2	1997	Jun-97	beetle	Eledona agricola	<i>Eledona agricola</i>	RD2 (UK)
1846	2	1997	Jun-97	beetle	Gabrieus keysianus	<i>Gabrieus keysianus</i>	RD2 (UK)
1846	2	1997	Jun-97	beetle	Helochares punctatus	<i>Helochares punctatus</i>	RD2 (UK)
1846	2	1997	Jun-97	beetle	Malthodes pumilus	<i>Malthodes pumilus</i>	RDB2 (UK) - S
1846	1	Unknown	Unknown	beetle	Striped Flea Beetle	<i>Phyllotreta striolata</i>	RD1 (UK)
375	90	Jan-09	10-Jun-17	bird	Coal Tit	<i>Parus ater</i>	WBA(m)(RSPB)
1315	1	11-Dec-10	11-Dec-10	bird	Common Gull	<i>Larus canus</i>	WBR(RSPB), UKBA(m)(RSPB)
1037	1	16-May-05	16-May-05	bird	Common Sandpiper	<i>Actitis hypoleucos</i>	WBA(m)(RSPB)
1055	9	10-Nov-10	19-Feb-17	bird	Cormorant	<i>Phalacrocorax carbo</i>	WBA(m)(RSPB), UKBA(m)(RSPB)
637	61	08-Dec-03	27-Feb-16	bird	Dipper	<i>Cinclus cinclus</i>	LBAP (MTR), WBA(m)(RSPB), UKBA(m)(RSPB)
953	5	May-97	08-Jun-16	bird	Garden Warbler	<i>Sylvia borin</i>	WBA(m)(RSPB)
839	30	Sep-07	24-Nov-17	bird	Goldcrest	<i>Regulus regulus</i>	WBA(m)(RSPB), UKBA(m)(RSPB)
310	41	09-Jan-02	09-Jun-16	bird	Green Woodpecker	<i>Picus viridis</i>	WBA(m)(RSPB), UKBA(m)(RSPB)
406	11	30-Jun-03	25-Jun-15	bird	House Martin	<i>Delichon urbicum</i>	WBA(m)(RSPB), UKBA(m)(RSPB)
637	21	29-Dec-11	09-Jun-16	bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	WBA(m)(RSPB), UKBA(m)(RSPB)
412	59	Jan-09	27-Feb-16	bird	Long-tailed Tit	<i>Aegithalos caudatus</i>	WBA(m)(RSPB)
637	56	Jun-91	10-Jun-17	bird	Mallard	<i>Anas platyrhynchos</i>	WBA(m)(RSPB), UKBA(m)(RSPB)
584	29	26-Jul-94	22-Oct-16	bird	Meadow Pipit	<i>Anthus pratensis</i>	WBA(m)(RSPB), UKBA(m)(RSPB)
999	4	31-Aug-15	Jan-17	bird	Mute Swan	<i>Cygnus olor</i>	WBA(m)(RSPB), UKBA(m)(RSPB)
406	8	30-Jun-03	Sep-07	bird	Redstart	<i>Phoenicurus phoenicurus</i>	WBA(m)(RSPB), UKBA(m)(RSPB)
480	13	12-Jun-12	19-Jun-15	bird	Sand Martin	<i>Riparia riparia</i>	WBA(m)(RSPB), UKBA(m)(RSPB)
1199	2	21-Mar-75	21-Mar-75	bird	Shelduck	<i>Tadorna tadorna</i>	WBA(m)(RSPB), UKBA(m)(RSPB)
1596	1	02-May-12	02-May-12	bird	Short-eared Owl	<i>Asio flammeus</i>	BDir1, CITES, WBR(RSPB), UKBA(m)(RSPB)
1836	2	13-Dec-05	13-Dec-05	bird	Snipe	<i>Gallinago gallinago</i>	BDir21, WBA(m)(RSPB), UKBA(m)(RSPB)
406	37	30-Jun-03	22-May-17	bird	Swallow	<i>Hirundo rustica</i>	WBA(m)(RSPB), UKBA(m)(RSPB)

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637	31	13-Jun-12	05-Jul-17	bird	Swift	<i>Apus apus</i>	WBA(m)(RSPB), UKBA(m)(RSPB)
1199	2	21-Mar-75	21-Mar-75	bird	Tufted Duck	<i>Aythya fuligula</i>	BDir21, WBA(m)(RSPB)
2418	5	17-Jun-03	27-Sep-12	bird	Wheatear	<i>Oenanthe oenanthe</i>	WBA(m)(RSPB)
1886	2	25-Jun-03	25-Jun-03	bird	Whinchat	<i>Saxicola rubetra</i>	UKBR(RSPB)
1062	7	28-Jun-07	02-Jun-16	bird	Whitethroat	<i>Sylvia communis</i>	WBR(RSPB), UKBA(m)(RSPB)
837	40	Jun-92	09-Jun-16	bird	Willow Warbler	<i>Phylloscopus trochilus</i>	WBR(RSPB), LBAP (CON), UKBA(m)(RSPB)
953	13	Jan-97	03-Feb-12	bird	Woodcock	<i>Scolopax rusticola</i>	BDir21, WBA(m)(RSPB), UKBR(RSPB), UKBA(m)(RSPB)
1740	1	15-Jun-98	15-Jun-98	bryophyte	Whip Fork-moss	<i>Dicranum flagellare</i>	RD1 (Wales), RD2 (UK), LI(VC41, LR),
1846	2	1997	Jun-97	bug	Anoscopus albifrons	<i>Anoscopus albifrons</i>	RD2 (UK)
1993	1	05-Jun-18	05-Jun-18	centipede	Lithobius (Lithobius) pilicornis	<i>Lithobius (Lithobius) pilicornis</i>	RDB2 (UK) - S
1846	5	1997	1997-2006	crane fly	Molophilus propinquus	<i>Molophilus propinquus</i>	RD2 (UK)
795	1	09-Jul-97	09-Jul-97	crane fly	Tanyptera atrata	<i>Tanyptera atrata</i>	RD2 (UK)
1012	4	Jul-07	06-Jun-13	fern	Limestone Fern	<i>Gymnocarpium robertianum</i>	RD2 (UK), WVP
1993	2	19-Aug-18	25-Aug-18	fly	Bright Four-spined Legionnaire	<i>Chorisops nagatomii</i>	RD2 (UK)
1846	3	1997	Jun-Sep-97	fly	Eupeodes nitens	<i>Eupeodes nitens</i>	RD2 (UK)
1917	2	Jun-96	Jun-96	fly	Liverwort Snipefly	<i>Spania nigra</i>	RD2 (UK)
1993	1	30-Jul-16	30-Jul-16	fly	Lophosia fasciata	<i>Lophosia fasciata</i>	RD2 (UK)
1157	2	19-Mar-19	19-Mar-19	fly	Norellia spinipes	<i>Norellia spinipes</i>	RD2 (UK)
1846	2	1997	Jun-97	fly	Opomyza lineatopunctata	<i>Opomyza lineatopunctata</i>	RD2 (UK)
1846	2	1997	Jun-97	fly	Psacadina verbekei	<i>Psacadina verbekei</i>	RD2 (UK)
1846	1	Jun-97	Jun-97	fly	Psacadina verbekei	<i>Psacadina verbekei</i>	RD2 (UK)
1979	2	Aug-96	Aug-96	fly	Rhamphomyia caliginosa	<i>Rhamphomyia caliginosa</i>	RD2 (UK)
2418	1	26-Apr-03	26-Apr-03	lichen	Bachmanniomyces uncialicola	<i>Bachmanniomyces uncialicola</i>	RDB2 (UK) - S
2418	1	26-Apr-03	26-Apr-03	lichen	Cercidospora epipolytropa	<i>Cercidospora epipolytropa</i>	RDB2 (UK) - S
1639	2	14-Oct-10	14-Oct-10	lichen	Verrucaria elaeomelaena s. lat.	<i>Verrucaria elaeomelaena s. lat.</i>	RDB2 (UK) - S,
1225	1	16-Jun-15	16-Jun-15	moth	Banded General	<i>Stratiomys potamida</i>	RD2 (UK)
637	2	1900-1927	28-Jun-07	moth	Scarce Grass-veneer	<i>Crambus pratella</i>	RD2 (UK)
1548	1	15-Apr-17	15-Apr-17	vasc.plant	Charlock	<i>Sinapis arvensis</i>	WVP
1539	1	12-Apr-18	12-Apr-18	vasc.plant	Fritillary	<i>Fritillaria meleagris</i>	RD1 (UK), RD2 (UK)
1816	1	08-Aug-94	08-Aug-94	vasc.plant	Green-leaved Hawkweed	<i>Hieracium acuminatum</i>	RD2 (UK),
2653	1	21-May-77	21-May-77	vasc.plant	Grey-leaved Whitebeam	<i>Sorbus porrigentiformis</i>	RD2 (UK),
635	1	07-Aug-74	07-Aug-74	vasc.plant	Rock Stonecrop	<i>Sedum forsterianum</i>	RD2 (UK), LI(SEWBRcC),
1012	5	Jul-07	06-Jun-13	vasc.plant	Soft-leaved Sedge	<i>Carex montana</i>	RD2 (UK), LI(SEWBRcC)

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Closest record to centre of site (m)	No. of records in area of search	Date of record closest to site	Most recent record in area of search	Taxon-omic Group	Common Name	Scientific Name	Designations
1012	3	Jul-07	29-May-15	vasc.plant	Welsh Poppy	<i>Meconopsis cambrica</i>	RD2 (UK),
1846	2	1997	Jun-97	weevil	Brooklime Gall Weevil	<i>Gymnetron veronicae</i>	RD2 (UK)
1846	2	05-Jun-97	05-Jun-97	weevil	<i>Gymnetron beccabungae</i>	<i>Gymnetron beccabungae</i>	RD2 (UK)
1271	2	14-Jul-97	14-Jul-97	weevil	<i>Phytobius leucogaster</i>	<i>Phytobius leucogaster</i>	RD2 (UK)
1846	2	1997	Jun-97	weevil	<i>Temnocerus longiceps</i>	<i>Temnocerus longiceps</i>	RD2 (UK)

TABLE 2.5.

**SPECIES OF LOCAL CONSERVATION CONCERN ADDITIONAL TO ABOVE
(MERTHYR TYDFIL COUNTY BOROUGH AREA ONLY)**

Closest record to centre of site (m)	No. of records in area of search	Date of record closest to site	Most recent record in area of search	Taxon-omic Group	Common Name	Scientific Name	Designations
1993	1	03-Jun-18	03-Jun-18	bee	Bilberry Bumblebee	<i>Bombus monticola</i>	LBAP (MTR)
1430	12	12-Apr-05	05-Apr-18	bee	Buff-Tailed Bumble Bee	<i>Bombus terrestris</i>	LBAP (MTR)
964	2	08-Feb-08	08-Feb-08	bee	Bumble Bee	<i>Bombus</i>	LBAP (MTR)
1320	7	22-May-18	22-May-18	bee	Common Carder Bee	<i>Bombus pascuorum</i>	LBAP (MTR)
1459	7	10-Jun-16	11-Apr-17	bee	Early Bumble Bee	<i>Bombus pratorum</i>	LBAP (MTR)
1968	4	29-Jun-09	29-May-18	bee	Large Red Tailed Bumble Bee	<i>Bombus lapidarius</i>	LBAP (MTR)
1993	2	11-Jun-15	31-Jul-17	bee	Small Garden Bumble Bee	<i>Bombus hortorum</i>	LBAP (MTR)
342	9	05-Aug-95	10-Apr-19	bee	White-Tailed Bumble Bee	<i>Bombus lucorum</i>	LBAP (MTR)
1676	3	17-May-96	1996	bryophyte	Blunt-leaf Tufa-moss	<i>Gymnostomum calcareum</i>	RD2 (UK), LI(VC41, LR)
479	1	1998	1998	bryophyte	Bog Earwort	<i>Scapania paludicola</i>	LI(VC41, LR),
1676	2	17-May-96	10-Feb-06	bryophyte	Bordered Thyme-moss	<i>Mnium marginatum</i>	LI(VC41, LR),
719	8	27-Aug-03	02-Apr-10	bryophyte	Ciliated Fringewort	<i>Ptilidium ciliare</i>	LI(VC41, LR),
1421	2	26-Aug-03	26-Aug-03	bryophyte	Drummond's Thread-moss	<i>Pohlia drummondii</i>	LI(VC41, LR),
2286	1	10-Feb-06	10-Feb-06	bryophyte	Fine-leaved Leskea	<i>Orthothecium intricatum</i>	LI(VC41, LR),
1882	3	15-Jun-98	15-Jun-98	bryophyte	Neat Silk-moss	<i>Isopterygiopsis pulchella</i>	LI(VC41, LR),
1740	1	31-May-11	31-May-11	bryophyte	Palmate Germanderwort	<i>Riccardia palmata</i>	LI(VC41, LR),
1630	1	Sep-05	Sep-05	bryophyte	Sessile Earth-moss	<i>Ephemerum sessile</i>	RD1 (UK),
1740	1	31-May-11	31-May-11	bryophyte	Straight-leaved Apple-moss	<i>Bartramia ithyphylla</i>	LI(VC41, EX),

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Closest record to centre of site (m)	No. of records in area of search	Date of record closest to site	Most recent record in area of search	Taxonomic Group	Common Name	Scientific Name	Designations
1676	1	17-May-96	17-May-96	bryophyte	Thick-nerved Apple-moss	<i>Philonotis calcarea</i>	LI(VC41, LR),
637	7	1900-27	10-Jul-07	butterfly	Dark Green Fritillary	<i>Argynnis aglaja</i>	LI(SEWBRc),
1040	6	14-Aug-10	19-Jul-18	butterfly	Silver-washed Fritillary	<i>Argynnis paphia</i>	LI(SEWBRc),
2286	2	21-Sep-89	21-Sep-89	fern	Beech Fern	<i>Phegopteris connectilis</i>	LI(SEWBRc),
839	3	Sep-07	Sep-07	fern	Moonwort	<i>Botrychium lunaria</i>	RD1 (UK), LI(SEWBRc),
1176	16	13-Jun-15	13-Jun-15	fern	Oak Fern	<i>Gymnocarpium dryopteris</i>	RD1 (UK), LI(SEWBRc),
1342	2	31-Aug-15	31-Aug-15	fern	Royal Fern	<i>Osmunda regalis</i>	LI(SEWBRc),
741	59	24-Jul-97	24-Jul-97	fish	Brown Trout	<i>Salmo trutta</i> subsp. <i>fario</i>	LBAP (MTR),
1954	1	13-Jun-96	13-Jun-96	lichen	<i>Caloplaca flavocitrina</i>	<i>Caloplaca flavocitrina</i>	RDB1 (Wales) - LC,
2418	1	26-Apr-03	26-Apr-03	lichen	<i>Cladonia azorica</i>	<i>Cladonia azorica</i>	RD2 (UK),
2418	1	26-Apr-03	26-Apr-03	lichen	<i>Cladonia diversa</i>	<i>Cladonia diversa</i>	RDB1 (Wales) - LC,
1879	2	14-Jun-96	14-Jun-96	lichen	<i>Micarea doliiformis</i>	<i>Micarea doliiformis</i>	RD2 (UK),
1879	2	14-Jun-96	14-Jun-96	lichen	<i>Mycobilimbia pilularis</i>	<i>Mycobilimbia pilularis</i>	RDB1 (Wales) - NT,
1879	2	14-Jun-96	14-Jun-96	lichen	<i>Thelidium minutulum</i>	<i>Thelidium minutulum</i>	RD2 (UK),
1907	4	01-Jul-06	16-Jul-15	moth	Red-necked Footman	<i>Atolmis rubricollis</i>	RD2 (UK), LBAP (MTR),
1390	4	31-Jul-97	01-Oct-97	odonata	Brown Hawker	<i>Aeshna grandis</i>	LI(SEWBRc),
406	15	30-Jun-03	08-Jul-08	odonata	Emerald Damselfly	<i>Lestes sponsa</i>	LI(SEWBRc),
342	8	05-Aug-95	27-Sep-95	odonata	Golden-ringed Dragonfly	<i>Cordulegaster boltonii</i>	LI(SEWBRc),
2418	2	17-Jun-03	17-Jun-03	odonata	Scarce Blue-tailed Damselfly	<i>Ischnura pumilio</i>	RD1 (UK), RD2 (UK), LI(SEWBRc),
514	1	09-Jul-97	09-Jul-97	odonata	Small Red Damselfly	<i>Ceragrion tenellum</i>	RD2 (UK), LI(SEWBRc)
1846	2	1997	Jun-97	orthoptera	Slender Ground-hopper	<i>Tetrix subulata</i>	LI(SEWBRc),
1659	1	May-Jun-73	May-Jun-73	vasc.plant	Alder Buckthorn	<i>Frangula alnus</i>	LI(SEWBRc),
584	2	26-Jul-94	Aug-94	vasc.plant	Alternate Water-milfoil	<i>Myriophyllum alterniflorum</i>	LI(SEWBRc),
1284	1	15-Apr-17	15-Apr-17	vasc.plant	Alt-leaved Golden-saxifrage	<i>Chrysosplenium alternifolium</i>	LI(SEWBRc),
432	7	22-Apr-97	29-Aug-02	vasc.plant	Bird Cherry	<i>Prunus padus</i>	LI(SEWBRc),
1163	1	25-Sep-79	25-Sep-79	vasc.plant	Black-poplar	<i>Populus nigra</i>	LI(SEWBRc),
1630	3	Sep-05	Sep-05	vasc.plant	Bladder-sedge	<i>Carex vesicaria</i>	LI(SEWBRc),
1012	2	Jul-07	Jul-07	vasc.plant	Common Butterwort	<i>Pinguicula vulgaris</i>	LI(SEWBRc),
1012	2	Jul-07	06-Jun-13	vasc.plant	Common Rock-rose	<i>Helianthemum nummularium</i>	RD1 (UK), LI(SEWBRc),
1976	1	07-Apr-19	07-Apr-19	vasc.plant	Crowberry agg.	<i>Empetrum nigrum</i>	LI(SEWBRc),
1204	2	27-Mar-14	27-Mar-14	vasc.plant	Daffodil	<i>Narcissus pseudonarcissus</i>	LI(SEWBRc),
839	1	Sep-07	Sep-07	vasc.plant	Dwarf Elder	<i>Sambucus ebulus</i>	LI(SEWBRc),
1012	1	Jul-07	Jul-07	vasc.plant	Dwarf Thistle	<i>Cirsium acaule</i>	LI(SEWBRc),
1618	2	28-Aug-03	11-Jul-07	vasc.plant	Fen Bedstraw	<i>Galium uliginosum</i>	LI(SEWBRc),

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1563	1	29-Aug-02	29-Aug-02	vasc.plant	Fragrant Agrimony	<i>Agrimonia procera</i>	LI(SEWBRcC),
953	3	02-Jul-97	29-Jun-09	vasc.plant	Grass Vetchling	<i>Lathyrus nissolia</i>	LI(SEWBRcC),
1555	2	16-Jul-07	16-Jul-07	vasc.plant	Greater Butterfly-orchid	<i>Platanthera chlorantha</i>	RD1 (UK), LI(SEWBRcC),
475	7	06-Jun-13	17-Aug-18	vasc.plant	Greater Knapweed	<i>Centaurea scabiosa</i>	LI(SEWBRcC),
504	2	06-Jun-13	03-Oct-94	vasc.plant	Greater Pond-sedge	<i>Carex riparia</i>	LI(SEWBRcC),
1315	2	04-May-02	29-Aug-02	vasc.plant	Green Field-speedwell	<i>Veronica agrestis</i>	LI(SEWBRcC),
1710	3	16-May-05	16-May-05	vasc.plant	Heath Dog-violet	<i>Viola canina</i>	RD1 (UK), LI(SEWBRcC),
342	11	12-Jul-94	27-Sep-05	vasc.plant	Intermediate Lady's-mantle	<i>Alchemilla xanthochlora</i>	LI(SEWBRcC),
1316	1	01-Jul-95	01-Jul-95	vasc.plant	Knotted Clover	<i>Trifolium striatum</i>	LI(SEWBRcC),
1103	1	16-Nov-81	16-Nov-81	vasc.plant	Lesser Bulrush	<i>Typha angustifolia</i>	LI(SEWBRcC),
1012	2	Jul-07	06-Jun-13	vasc.plant	Limestone Bedstraw	<i>Galium sternerii</i>	LI(SEWBRcC),
1012	2	Jul-07	Jul-07	vasc.plant	Long-stalked Yellow-sedge	<i>Carex viridula</i> <i>ssp. brachyrrhyncha</i>	LI(SEWBRcC),
1342	1	31-Aug-15	31-Aug-15	vasc.plant	Narrow-leaved Water-plantain	<i>Alisma lanceolatum</i>	LI(SEWBRcC),
1603	1	1971	1971	vasc.plant	Nodding Bur-marigold	<i>Bidens cernua</i>	LI(SEWBRcC),
584	2	26-Jul-94	09-Jul-97	vasc.plant	Pink Water-Speedwell	<i>Veronica catenata</i>	LI(SEWBRcC),
480	5	26-Aug-72	28-Jun-07	vasc.plant	Small Cudweed	<i>Filago minima</i>	RD1 (UK), LI(SEWBRcC),
584	2	26-Jul-94	Aug-94	vasc.plant	Small Pondweed	<i>Potamogeton berchtoldii</i>	LI(SEWBRcC),
1846	1	2009	2009	vasc.plant	Smith's Pepperwort	<i>Lepidium heterophyllum</i>	LI(SEWBRcC),
399	1	29-Jun-94	29-Jun-94	vasc.plant	Smooth Brome	<i>Bromus racemosus</i>	LI(SEWBRcC),
2286	2	21-Sep-89	21-Sep-89	vasc.plant	Smooth Lady's-mantle	<i>Alchemilla glabra</i>	LI(SEWBRcC),
780	1	12-Jul-94	12-Jul-94	vasc.plant	Sweet-briar	<i>Rosa rubiginosa</i>	LI(SEWBRcC),
1525	5	Apr-May-02	Ap-May-02	vasc.plant	Toothwort	<i>Lathraea squamaria</i>	LI(SEWBRcC),
1603	2	1971	23-Feb-73	vasc.plant	Unbranched Bur-reed	<i>Sparganium emersum</i>	LI(SEWBRcC),
1012	1	Jul-07	Jul-07	vasc.plant	Upright Brome	<i>Bromopsis erecta</i>	LI(SEWBRcC),
475	1	06-Jun-13	06-Jun-13	vasc.plant	Viper's-bugloss	<i>Echium vulgare</i>	LI(SEWBRcC),
480	8	06-Jun-13	22-Jun-13	vasc.plant	Water Avens	<i>Geum rivale</i>	LI(SEWBRcC),
342	3	12-Jul-94	11-Jul-07	vasc.plant	Yellow Water-lily	<i>Nuphar lutea</i>	LI(SEWBRcC),

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2.2.14 Invasive Non-Native Species (INNS)

The SEWBRc dataset includes the following INNS as having been recorded within 2km of the survey site. American Mink, Canada Goose, Canadian Waterweed, Cherry Laurel, Entire-leaved Cotoneaster, Giant Knotweed, Harlequin Ladybird, Hollyberry Cotoneaster, Hybrid Monkeyflower, Indian (Himalayan) Balsam, Japanese Knotweed, Least Duckweed, Monkeyflower, Montbretia, New Zealand Willowherb, Nuttall's Waterweed, *Rhododendron ponticum*, Small-leaved Cotoneaster, Spanish Bluebell, Wall Cotoneaster, White Stonecrop and Silver-leaved Yellow Archangel.

With the exception of a small bush of Cherry Laurel (TN17) and possible Hollyberry Cotoneaster (TN5), no Invasive Non-Native Species were recorded during the present Phase 1 habitat survey.

2.3 Habitat Survey Methodology

The habitats and vegetation present within the survey site were surveyed by Richard Pryce at approximately 1:100 scale between 11:00hrs and 14:00hrs on 8th August 2019.

Weather: sunny intervals, light NW wind to calm, clear 20°C, 6/8 cloud.

The methodology used was based upon that described in the *Handbook for Phase 1 habitat survey - a technique for environmental audit*. (Nature Conservancy Council, 1990), a methodology primarily intended for surveying at 1:10000 scale. The results are presented on the Phase 1 habitat map at figure 2 which includes codes showing the locations of dominant and significant plant species. The locations of Target Notes (TN) are also shown. Brief descriptions of each habitat type are given below in the order set out in the *Handbook*. The Target Notes include comprehensive species lists (including their Latin names) and are reproduced at appendix 2. Lists of species collated from the target notes are included at appendix 3.

2.4 Semi-natural broad-leaf woodland and trees

No areas of semi-natural broad-leaf woodland are located within the survey site or its immediate vicinity.

A line of mature trees dominated by Ash is present along about 40m of the boundary in the north of the survey site (west of Target Note (TN)16). Other species present here include Hawthorn, birch, Sycamore, Grey Willow and Hazel.

The only other mature trees are included in the overgrown hedgeline extending south from the south-west corner of the survey site where a large Sycamore is located at the northern end of the hedgeline and just impinges into the site (near TN2).

Neither of these features is located within the application site area.

A few self-sown bushes and young trees are established in the extensive Bramble-dominated scrub on the east-facing slope within the eastern boundary of the survey site. These include Grey Willow, Hazel, Hawthorn, birch and Sycamore.

2.5 Planted woodland

The majority of the survey site is occupied by broad-leaf woodland probably planted in the 1990s and now well established on the regraded colliery spoil substrate. This woodland generally comprises of unthinned, etiolated trees about 10m – 15m tall which cast relatively heavy shade and consists mainly of native species, principally Ash, birch, Pedunculate Oak,

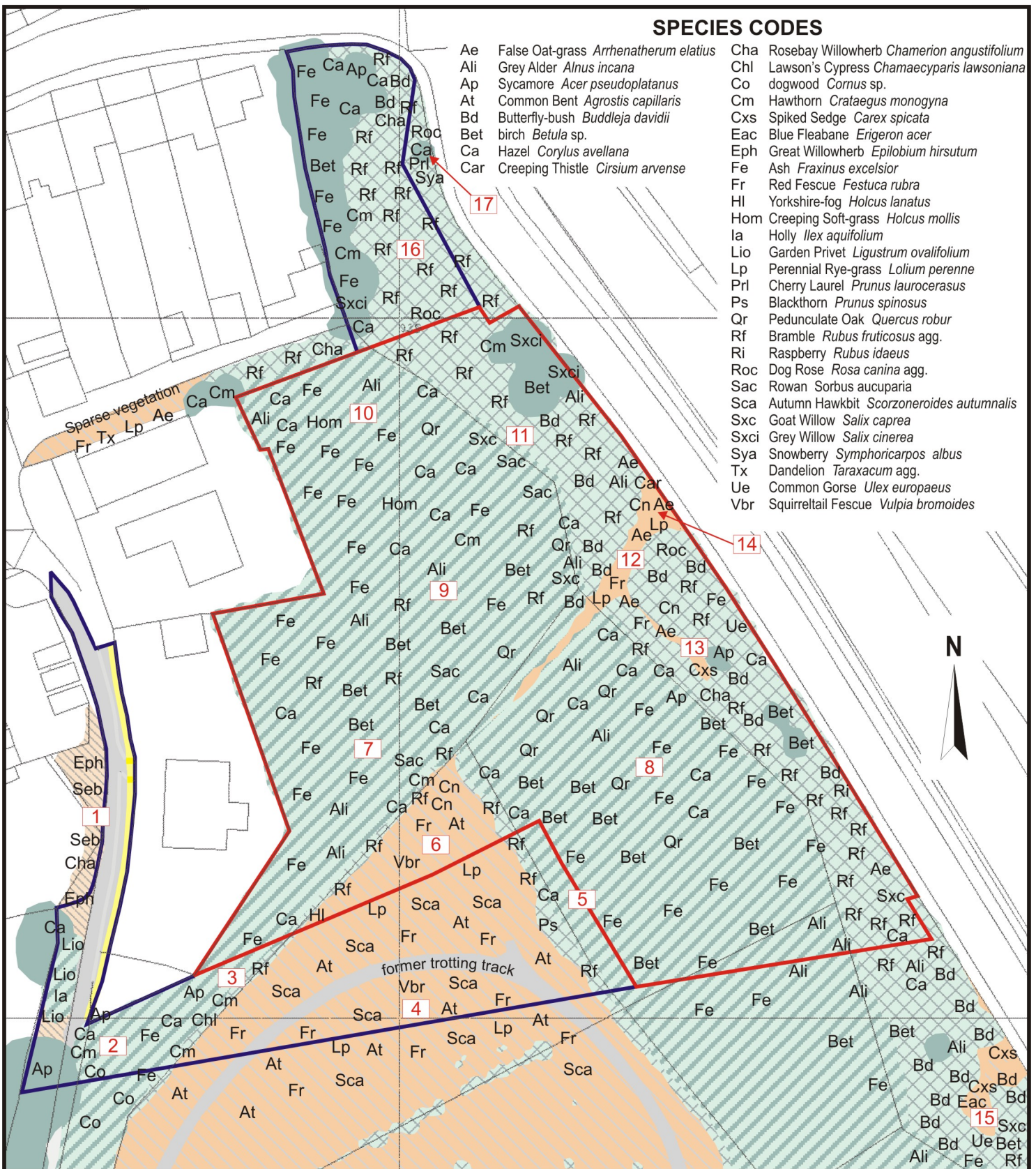
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SPECIES CODES

Ae False Oat-grass *Arrhenatherum elatius*
 Ali Grey Alder *Alnus incana*
 Ap Sycamore *Acer pseudoplatanus*
 At Common Bent *Agrostis capillaris*
 Bd Butterfly-bush *Buddleja davidii*
 Bet birch *Betula* sp.
 Ca Hazel *Corylus avellana*
 Car Creeping Thistle *Cirsium arvense*

Cha Rosebay Willowherb *Chamaecyparis angustifolium*
 Chl Lawson's Cypress *Chamaecyparis lawsoniana*
 Co dogwood *Cornus* sp.
 Cm Hawthorn *Crataegus monogyna*
 Cxs Spiked Sedge *Carex spicata*
 Eac Blue Fleabane *Erigeron acer*
 Eph Great Willowherb *Epilobium hirsutum*
 Fe Ash *Fraxinus excelsior*
 Fr Red Fescue *Festuca rubra*
 Hl Yorkshire-fog *Holcus lanatus*
 Hom Creeping Soft-grass *Holcus mollis*
 Ia Holly *Ilex aquifolium*
 Lio Garden Privet *Ligustrum ovalifolium*
 Lp Perennial Rye-grass *Lolium perenne*
 Prl Cherry Laurel *Prunus laurocerasus*
 Ps Blackthorn *Prunus spinosus*
 Qr Pedunculate Oak *Quercus robur*
 Rf Bramble *Rubus fruticosus* agg.
 Ri Raspberry *Rubus idaeus*
 Roc Dog Rose *Rosa canina* agg.
 Sac Rowan *Sorbus aucuparia*
 Sca Autumn Hawkbit *Scorzonoides autumnalis*
 Sxc Goat Willow *Salix caprea*
 Sxci Grey Willow *Salix cinerea*
 Sya Snowberry *Symphoricarpos albus*
 Tx Dandelion *Taraxacum* agg.
 Ue Common Gorse *Ulex europaeus*
 Vbr Squirreltail Fescue *Vulpia bromoides*



LEGEND

- Application site boundary
- Survey area boundary
- Mature hedgerows and trees
- Broadleaf woodland planted on colliery spoil
- Continuous and scattered scrub established on colliery spoil
- Rank, unmanaged neutral grassland
- Sparse neutral grassland on colliery spoil
- Amenity grassland
- Tall herb vegetation
- Tracks
- 11 Location of Target Note

Field survey carried out
 by Richard Pryce
 on 8th August 2019

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Land at Colliers Row, Merthyr Tydfil.

Figure 2

PHASE 1 HABITAT SURVEY

SCALE
METRES

0 50



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Hawthorn, Hazel and Goat Willow but also includes significant numbers of Grey Alder and stands of Dogwood.

Within most of the woodland, the shade, together with the physically harsh and infertile nature of the spoil substrate as a growing medium has discouraged the development of a significant shrub layer or ground flora although in parts, Bramble is becoming established and where there is less shade, eg where Ash trees are succumbing to Ash die-back disease, a herb layer is present including species such as Creeping Soft-grass, Wood Avens Common Nettle, Cleavers and Red Campion with a moss carpet in places (eg TN9). Also, despite the less than favourable ground conditions, self-sown tree seedlings and saplings of the planted species are present within much of the woodland stand.

At the top of the slope along the north-eastern boundary of the planted woodland, several more-mature trees are established along the fence-line which include a multi-stem Goat Willow at TN11 and several Ash trees further south (bounding TN8).

2.6 Scrub

An extensive area of dense, inaccessible scrub occupies the north-east facing slope inside the north-eastern boundary of the survey site. This is mainly dominated by Bramble but also includes prominent bushes and stands of Butterfly-bush and actively establishing birch, Pedunculate Oak, Ash, Hazel, Hawthorn, Goat Willow, Grey Willow, Grey Alder, Sycamore, Dog Rose, Common Gorse and Raspberry, currently in various stages of maturity. Also, a single Cherry Laurel sapling (an Invasive Non-native Species) was recorded near the northern extremity of the site associated with Dog-rose, Hazel and Snowberry which, together, form a "bush" adjacent to the pavement just south of the road junction at TN17.

Small areas within and by the edge of this scrub-dominated bank and along the lines of former pathways (now impassable due to the encroachment of Bramble) still have stands of tall herb species eg Rosebay Willowherb, Common Knapweed, Great Willowherb and False Oat-grass associated with, but being subsumed by the colonising scrub.

The woodland around the open grassland area in the southern part of the survey site is generally lined by a margin of scrub which reaches its widest in the vicinity of TN5 where Blackthorn is growing out into the grassland and gives cover to tall herbaceous species such as Common Knapweed. Abundant Bramble with locally frequent rose and occasional Hazel, also contribute to edge-habitat of varying width in this vicinity. Bramble is also dominant in a narrower swathe along the fence line north-east of TN3.

2.7 Grassland

The southern part of the survey site includes an area of rather sparse, horse-grazed grassland established on colliery spoil (TN4 and TN6). Vegetation cover is variable but is no more than 80%-95% although may be much less in areas where there has been horse poaching and along the line of the former trotting track.

The sward was probably first sown when the colliery spoil was regraded (probably in the 1990s) and is characteristic of similar vegetation established on other regraded spoil. Grass species include Common Bent, Perennial Rye-grass, Red Fescue, Crested Dog's-tail, Sweet Vernal-grass and Squirreltail Fescue and the most frequent forbs include Yarrow, Dandelion and Ribwort Plantain with a few plants each of Common Centaury and Greater Bird's-foot Trefoil being noted although Common Bird's-foot Trefoil is relatively frequent. However, most notable is the high frequency of *Scorzonoides autumnalis* var. *coronopifolia*, the variety of autumn hawkbit with finely-dissected leaves which, at the time of the survey, had turned the sward yellow with the abundance of its flowers. In scuffed areas, species such

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as Pineappleweed, Slender Rush, Red Bartsia, Greater Plantain and the knotgrass *Polygonum polycnemiforme* were recorded. Scattered bushes are becoming established in the grassland area, particularly along the fenceline to the south of the survey site.

The sward becomes taller and more rank around the margins with tall herb species noted such as Common Knapweed, Smooth Hawk's-beard, Red Bartsia, Common Ragwort and Perforate St. John's-wort.

The access track from the northern corner of the grassland area to the road along the north-eastern boundary of the site, where not overshadowed by woodland, is generally grassy with Perennial Rye-grass, Red Fescue and Cock's-foot being prominent in the sward (TN12-TN14). Where it becomes more open, the vegetation includes, for example, Common Bird's-foot Trefoil, Red Clover, Dandelion, Slender Rush, knotgrass, Pineappleweed, Red Bartsia and Cut-leaved Crane'sbill and is flanked by rank grass and tall-herb vegetation which includes Yarrow, Common Knapweed, Rosebay Willowherb, Wild Carrot, Upright Hedge-parsley and Scentless Mayweed. An overgrown path nearby (TN13) had similar vegetation but also included a single plant of Spiked Sedge.

A small open area of colliery spoil outside the survey site at TN15 supports similar vegetation including a few clumps of Spiked Sedge and about 25 plants of Blue Fleabane in a small open area of colliery spoil a few m back from the road.

2.8 Tall Herb Vegetation

Tall herb vegetation generally grows within and at the edges of areas becoming colonised by Bramble and scrub, the two vegetation types being closely associated. Rose-bay Willowherb and Great Willowherb are the most prominent species but Common Nettle and Common Knapweed were also noted. Large Bindweed was seen to be scrambling through the tops of some of the Bramble stands, particularly in the north of the survey site at TN16.

In the west of the survey site, the north-south aligned access track is flanked on its western side by mixed tall-herb vegetation, most prominent amongst which is Dwarf Elder, this being a relatively large, although linear stand, of this locally important species (TN1). Cow Parsley, Hedge Bindweed, Rosebay Willowherb, Great Willowherb and Bramble are also components of this vegetation. This area is just outside the survey site.

2.9 Open water (watercourses and ponds) and wetlands

No watercourses or ponds or wetlands are located within or in the immediate vicinity of the survey site.

2.10 Invasive Non-Native Species (INNS)

Records of INNS held on the SEWBRc database and located within 2km of the survey site are listed at paragraph 2.2.14. By far the most recorded species in the data set is Japanese Knotweed but, with the exception of a small bush of Cherry Laurel recorded about 25m north of the application site on the roadside at TN17 and a single possible Hollyberry Cotoneaster on the woodland edge at TN5, no Invasive Non-Native Species were recorded during the present survey. Neither of these species is of major significance at this site at present but it should be noted that bird-sown seedlings may be present within the application site and any plants encountered during construction works should be removed for off-site disposal.

Although no Japanese Knotweed stands or plants were seen during the survey, it is possible that small plants might have been overlooked. Site staff should be aware of its possible presence and be vigilant in its detection. Construction works must ensure that knotweed stands are not disturbed in a way that would cause the spread or export of propagules from

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the site and site operations must comply with approved containment practices. Japanese Knotweed must be treated using approved methods prior to the commencement of any work which might cause its disturbance or spread.

2.11 Significant vegetation types and plant species

Open Mosaic Habitats on Previously Developed Land (OMHoPDL) is a *Habitat of Principal Importance for Conservation of Biological Diversity* under section 7 of the Environment (Wales) Act 2016. Prior to the regrading of the colliery spoil and its planting with woodland in the c.1990s, the survey site would probably have qualified as a good example of this habitat. However, although established on colliery spoil, the planted woodland, sown grassland and colonizing scrub cannot now be considered as OMHoPDL.

No plants of international or national significance were recorded during the survey and the SEWBRc data indicate that none have been recorded within the site in the past. However, the following species are considered to be of County Borough importance. The numbers of previous records were verified by the Botanical Society of Britain and Ireland's County Recorder for Glamorgan.

Spiked Sedge (*Carex spicata*). A single plant of this species was found growing in rank grassland on the line of a now overgrown and impassable path on the scrubby, north-east facing slope inside the eastern boundary of the application site (TN13). A further two plants were found in similar vegetation on the same slope, south-east (outside) of the survey site at TN15. This species is considered to be of County Borough Importance as there is only one previous record in the County Borough.

Dwarf Elder (*Sambucus ebulis*). A quite extensive stand of this species grows outside the western boundary of the survey area at TN1 (some 30m from the closest boundary of the application site). This species is designated as Locally Important in the SEWBRc area but it can also be considered as County Borough Importance as there are only two previous records in the County Borough.

Blue Fleabane (*Erigeron acer*). At least 20 plants were found about 60m to the south-east of the application site boundary at TN15 in a small patch of largely unvegetated spoil becoming overgrown with Butterfly-bush, Bramble and other scrub. This species is considered to be of County Borough Importance as there are only five previous records in the County Borough.

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3. PROTECTED and SIGNIFICANT FAUNA

3.1 Introduction

An assessment of the potential for habitats within the survey site and its vicinity was undertaken in order to identify any constraints to the proposed development which might result from the presence of protected or other significant faunal species.

Actual or potential rest sites of species such as bats and Badger which might be damaged, destroyed or obstructed by the proposed works were sought and an assessment of any potential impact on the use of the site by these species was made.

Assessment was also made of the possible impact of the proposed works on other protected taxa including Common Dormouse, breeding birds, amphibians and reptiles.

The ecology, survey methods, conservation status and protection legislation of the protected and significant fauna included in the sections below are outlined at appendix 4.

3.2 Assessment Methods

The assessment of the potential for habitats within the survey site and its vicinity to support protected and other significant faunal species was undertaken by Richard Pryce during the Phase 1 Habitat Survey on 8th August 2019. The data procured from SEWBRc were also used in the assessment.

Badger. The survey site and adjacent area, including additional land at least 30m wide around the perimeter of the application site (ie the distance within which it is generally considered that, if site works are undertaken, disturbance to a sett would occur), was searched for the presence of setts (burrow systems) and for evidence of Badger use. Such evidence includes the presence of paths, footprints, latrines and foraging activity.

Otter. The survey site and adjacent area, including additional land at least 30m wide around the perimeter of the application site, was searched for the presence of holts (rest sites) and for evidence of Otter use of the area. Such evidence includes paths, footprints, spraint (characteristically scented faeces often placed in prominent positions) and feeding remains.

Bats. Trees within and adjacent to the survey site were visually examined from the ground where accessible and assessed for potential bat roost features which might provide the opportunity for bats to roost in them. Such opportunities include holes, hollows/dead wood, cracks/splits and dense ivy plates. No buildings or other constructions which might have potential to harbour roosting bats are present within the survey site.

The capability of the habitats within the survey site to support other protected and significant species was also examined with a view to assessing the likelihood of these species residing or occurring within the site.

A description of the habitats within the survey site is included at paragraphs 2.4 – 2.10, above.

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3.3 Assessment Results

European Protected Species

European Protected Species and their places of rest or shelter are fully protected under the 'Habitats Regulations' and a 'licence to disturb' is required to permit any disturbance to individual animals or their places of rest or shelter and, in the case of Dormice, also habitat where animals are known to reside.

3.3.1 Bats

3.3.1.1 Bat Introduction

All bats are protected under schedule 5 of the Wildlife and Countryside Act 1981 and, with the exception of Noctule Bat, all are also designated as European Protected Species under the Habitats Regulations¹. The objective of this survey was to identify the potential of any trees located within the survey site to harbour roosting bats. No bat activity survey has been carried out for this Preliminary Ecological Appraisal.

A description of the site and its habitats is included in the Phase 1 habitat survey report at paragraphs 2.4 – 2.10, above. The ecological context and legal status of bats are outlined at appendix 4.

The SEWBRc data includes 248 records of eleven bat species recorded within 2km of the survey site, details of which are at Tables 2.1 and 2.2. The closest record is 573m from the centre of the site and the most recent was made in 2019, the most frequently recorded species being Common Pipistrelle and Soprano Pipistrelle.

3.3.1.2 Bat Survey Method

The woodland and trees within the survey site were subject to a visual examination from the ground, as far as surveyor access would allow, in search of features which might be used by day-roosting bats. Such features include cracks/crevices, splits, deadwood, hollows, woodpecker holes and ivy plates.

Trees were subjectively assigned to a category of "likelihood of use", based on the scoring system detailed at table 3.1.

Table 3.1

Assessment of potential bat-roosts in trees, achieved by 'from the ground' inspection

<i>Tree assessment category</i>	<i>Stage 1</i>	<i>Stage 2</i>	<i>Constraints to tree felling or disturbance</i>
Known or confirmed roost	European Protected Species Licence is required in order to carry out the felling or disturbance legally. This will require further input from a licenced bat ecologist		

¹ The Habitats Directive (No. 92/43/EEC) requires the UK to maintain and/or restore naturally occurring habitats and species, especially those which are deemed to be vulnerable and declining and/or threatened in Europe. The requirements of the Directive are implemented through the *Conservation (Natural Habitats etc) Regulations 1994*, updated in 2010.

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Category 1* multiple features suitable for multi-animal use	Further assessment required pre-works to deter-mine use using either <u>direct examination</u> <u>survey</u> and/or <u>direct observation</u> <u>emergence/ entry</u> <u>survey</u>	<i>Either</i> Proceed as for a "known or confirmed roost" (above) <i>or</i> "soft felling" supervised by the ecologist	<i>Either</i> European Protected Species Licence must be procured <i>or</i> "soft felling" supervised by the ecologist
Category 1 Fewer or less suitable features, <i>and/or</i> potential for individual roosting	Further assessment will be required pre-works to determine bat use by means of a general bat- activity survey,	<i>Either</i> Proceed as for a "known or confirmed roost" (above) <i>or</i> as category 2 (below)	<i>Either</i> European Protected Species Licence must be procured <i>or</i> Take reasonable care during works- stop work & seek advice if potential roost features found
Category 2 No features visible from the ground but the size or age of the tree might or obscuring ivy might point to the potential for roost features	None unless new evidence is found during works	none	Take reasonable care during works- stop work & seek advice if potential roost features found
Category 3 no potential to host roosting bats	none	none	none

3.3.1.3 Bat Survey Results

Tree examination

With the few exceptions described below, the trees within the survey site are young-mature, planted, broadleaf species of uniform age which are too young and of unsuitable conformation to have developed features required to harbour roosting bats. Trunks are generally rather thin and etiolated. In a few cases, very light ivy cover partially obscures sight of some of the upper trunks and foliage obscures the highest sections but, at that height, stems are too thin to offer roost sites. However, all trunks, where visible, are clean and free of any cracks/crevices. No bat day-roost opportunities were identified in these trees and all are assessed as having no roost potential (Category 3 on Table 3.1).

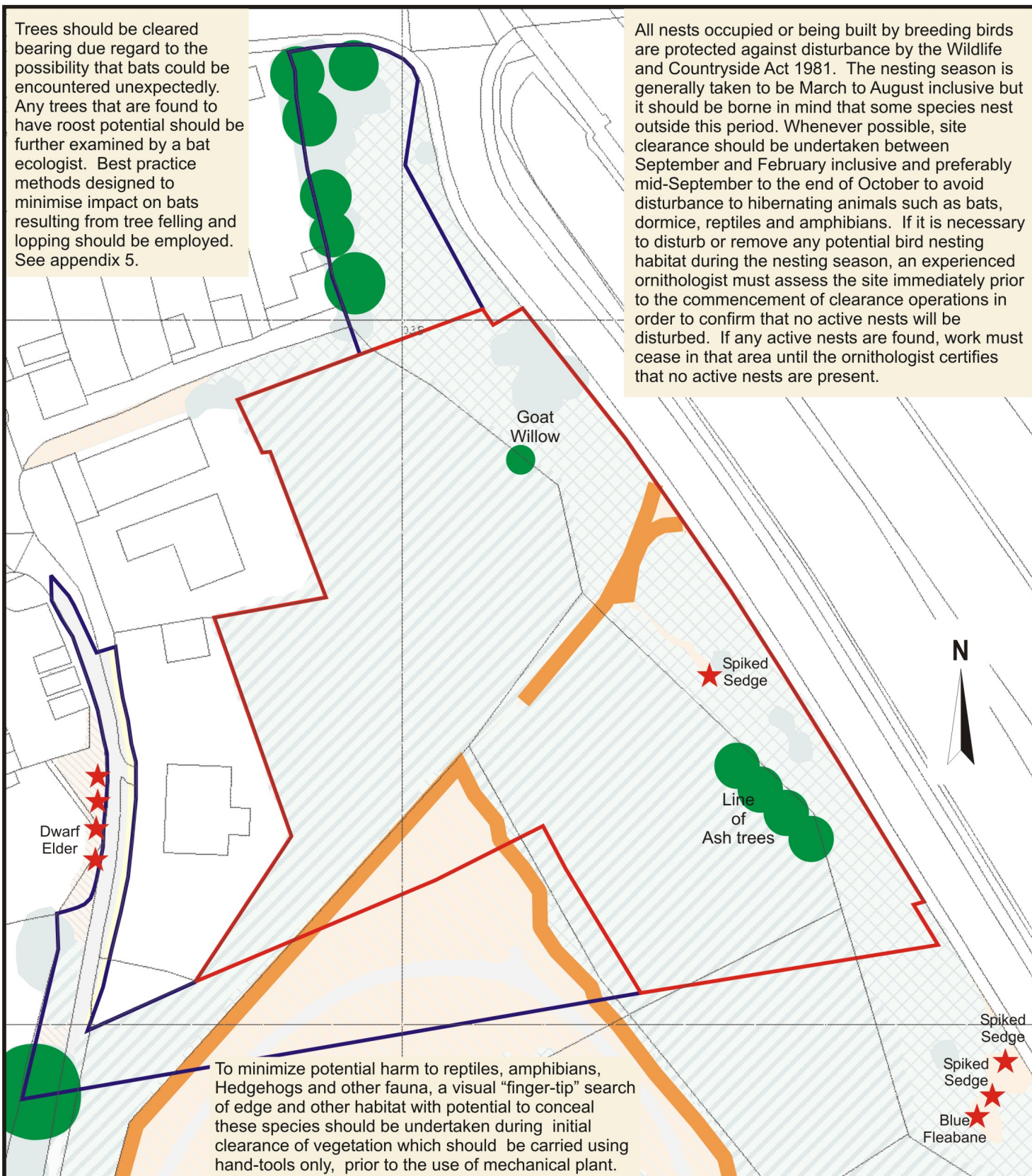
A single multi-stem Goat Willow and a line of Ash trees, better-grown than in the remainder of the woodland, is present near the fence line within the application site woodland (see figure 3). It was judged that these trees have the possibility of having greater potential to harbour roosting bats than the remainder of the woodland trees and have the potential to be included in Category 2 (Table 3.1).

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Trees should be cleared bearing due regard to the possibility that bats could be encountered unexpectedly. Any trees that are found to have roost potential should be further examined by a bat ecologist. Best practice methods designed to minimise impact on bats resulting from tree felling and lopping should be employed. See appendix 5.

All nests occupied or being built by breeding birds are protected against disturbance by the Wildlife and Countryside Act 1981. The nesting season is generally taken to be March to August inclusive but it should be borne in mind that some species nest outside this period. Whenever possible, site clearance should be undertaken between September and February inclusive and preferably mid-September to the end of October to avoid disturbance to hibernating animals such as bats, dormice, reptiles and amphibians. If it is necessary to disturb or remove any potential bird nesting habitat during the nesting season, an experienced ornithologist must assess the site immediately prior to the commencement of clearance operations in order to confirm that no active nests will be disturbed. If any active nests are found, work must cease in that area until the ornithologist certifies that no active nests are present.



LEGEND

- Application site boundary
- Survey area boundary
- Mature hedgerows and trees
- Planted broadleaf woodland
- Scrub
- Rank neutral grassland
- Sparse neutral grassland
- Amenity grassland
- Tall herb vegetation
- Tracks

POTENTIAL ECOLOGICAL CONSTRAINTS

- Potential category 2 bat roost tree (see text). All other trees are judged to be category 3
- Potential reptile habitat
- ★ Plant species of County Borough Importance

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Figure 3

POTENTIAL ECOLOGICAL CONSTRAINTS

0 SCALE 50
METRES



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The line of mature trees along the boundary in the northern section of the survey site, west of TN16 (on figure 2), may possibly have bat roost potential. These trees will not be affected by the proposed development and were not examined in detail.

The only other tree with possible bat roost potential is a mature Sycamore located at the extreme south-western corner of the survey site ('Ap' near TN2 on figure 2) and will not be affected by the proposed development. This tree was not examined in detail.

3.3.1.4 Bat Summary

No bat roost-use of the trees was identified within the site during the survey and no day-roost opportunities were identified at the trees.

Existing bat data procured through SEWBRcC would indicate that bats are not particularly attracted to the habitats within the survey site but this is likely to be a reflection of lack of observations rather than an indication of the actual situation. Whilst no potential bat roosts were found during the survey or are anticipated to occur within the application site, the houses located to the north-west (and elsewhere in the vicinity), as well as other constructions and mature/senescent trees, are likely to harbour roosting bats. These local bat populations need habitat in which to feed and the features within the survey site, particularly the woodland and scrub areas, are likely to provide foraging potential.

No bat related constraints to tree removal were identified. However, should bats or evidence of bats be found during site operations, all work to the tree must stop immediately and advice sought from a licenced bat ecologist.

No further bat survey is considered necessary.

3.3.2 Otter

Otter activity/presence is known along the Afon Taf and there are records from within 2km of the survey site, the most recent being in 2010.

No signs of Otter were found during the present survey.

It is extremely unlikely that Otters would be attracted to the site due to the absence of any water courses in the near vicinity, the absence of any potential food resource within the site and the urban nature of the land between the site and the Afon Taf which is subject to frequent disturbance by human and dog activity.

3.3.3 Dormouse

The SEWBRcC data record no past observations of Dormice within 2km of the survey site although the National Biodiversity Network has an occurrence in Penmoelallt (SO0009) about 4km to the north-west.

No signs of Dormice were seen during the survey and, although the habitats within the survey site might sustain Dormice for some times during the year, none are considered to provide optimal habitat capable of sustaining animals throughout the year. Furthermore, the site's remoteness from the location of known past Dormouse records and imperfect habitat connectivity would suggest that it is unlikely that animals are present within or visit the site.

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3.3.4 Great Crested Newt

The SEWBRc data includes 87 records of Great Crested Newt recorded within 2km of the survey site, the closest of which is 637m from the centre of the site and the most recent was made in 2014. Breeding ponds are located in particular in the Cwm Glo area and in areas of colliery patch workings. Ponds are also located to the north-west of Heol Gerrig.

No breeding ponds are located within the survey site which is beyond the generally accepted distance of c.500m (maximum) that it is thought Great Crested Newts may travel away from their breeding sites during their terrestrial phase. Furthermore, little habitat suitable for terrestrial phase animals to take refuge is located within the survey site.

It is considered unlikely that Great Crested Newts occur within, or visit the survey site.

3.3.5 Other European Protected Species

There is no habitat suitable to support other European Protected Species (eg Marsh Fritillary butterfly, Atlantic Salmon) located within the survey site, neither is it anticipated that any such species will visit the site.

Nationally Protected Species

Species and their places of rest or habitats included on schedule 5 of the Wildlife and Countryside Act 1981, as amended, are protected to varying degrees and a licence may be required to permit any disturbance to individual animals or their places of rest. Such species additional to those that also have international protection include Water Vole, reptiles and amphibians. Occupied bird's nests or nests being built are also protected by the Act. The Badger and its places of rest is protected by the Protection of Badgers Act 1992.

3.3.6 Badger

The SEWBRc dataset includes four records of Badger within 2km of the survey site, the closest being 839m from the centre of the site and the most recent in November 2010.

No signs of the species were observed during the present survey although the habitat is suitable, including dense woodland and scrub suitable for sett concealment and the colliery spoil substrate permitting relatively easy excavation. However, the spoil is unlikely to encourage the growth or development of a particularly abundant foraging resource. The close proximity of human habitation and the likelihood of disturbance by dogs are also likely to discourage Badgers from occurring within, or visiting the site.

3.3.7 Water Vole

There are three records of Water Vole from within 2km of the survey site on the SEWBRc dataset but there is no habitat within, or in the vicinity of the site suitable to support the species.

3.3.8 Birds

All occupied birds' nests or nests being built are protected under the Wildlife and Countryside Act 1981 and schedule 1 of the Act gives complete protection to a range of species which are under particular threat or subject to population declines. Public bodies have a duty to

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consider the wellbeing of species included on the list of *Species of Principal Importance for Conservation of Biological Diversity* under section 7 of the Environment (Wales) Act 2016 and in consequence these species are material considerations in the planning process. All bird species are described in this section of the present document.

Although, no formal breeding bird survey has been carried out for this appraisal, suitable nesting habitat was assessed and the presence of birds likely to be nesting in the vicinity, noted. Few bird species were recorded during the survey but it should be borne in mind that, at the time the survey was undertaken, birds would have been generally silent and would therefore not have been evident as the breeding season was coming to an end. Species recorded are as follows.

Blue Tit	2 birds in scrub in eastern part of site
Goldfinch	2 birds in scrub in eastern part of site
Great Tit	2 birds in planted woodland
Green Woodpecker	Calling from trees south-west of site
Herring Gull	Several flying over site at various times
Nuthatch	Calling from woodland

Green Woodpecker is included on the RSPB Amber List of conservation concern.

Herring Gull is included as a Section 7 *Species of Principal Importance* and is also included on the RSPB Red List of conservation concern.

The SEWBRc dataset includes numerous bird records from within 2km of the site. Species protected by their inclusion on schedule 1 of the Wildlife and Countryside Act 1981 for which habitat suitable for nesting or foraging is located within the survey site are as follows

Fieldfare, Redwing	Likely nomadic winter visitors to site foraging for berries, etc.
Goshawk, Hobby, Peregrine, Red Kite	The survey site potentially could form a very small part of the hunting territories of any of these raptors but visitations are likely to be remote in the extreme, although birds may occasionally be seen flying over the site

Species in the SEWBRc dataset recorded from within 2km of the site that are included as Section 7 *Species of Principal Importance* and also included on the RSPB Red List of conservation concern are as follows

Bullfinch, Dunnock, Song Thrush	Potential breeding within survey site
Marsh Tit	Unlikely but possible breeding within survey site
House Sparrow, , Starling, Lesser Redpoll	Likely to breed in vicinity and likely to, or possibly may forage or roost within the survey site
Linnet, Spotted Flycatcher	Habitat within survey site generally unsuitable for nesting but possible visitor
Lesser Spotted Woodpecker	Uncommon and unlikely to visit site.
Black-headed Gull	Unlikely to visit site although likely overflying.

In addition, species such as Mistle Thrush, Skylark, Tree Pipit, Whinchat and Willow Tit may nest in the vicinity or visit the site and Woodcock may occur in winter. All these species are also Section 7 *Species of Principal Importance* and/or included on the RSPB Red List.

Species in the SEWBRc dataset recorded from within 2km of the site that are included on

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the RSPB Amber List of conservation concern are as follows

Coal Tit, Garden Warbler, Goldcrest, Long-tailed Tit	Potential breeding within survey site
Green Woodpecker	Likely to breed in vicinity and likely to, or possibly may forage within the survey site
Redstart	Unlikely to visit site.
House Martin, Sand Martin, Swallow	Likely or possibly seen aerially hunting over site but unlikely to alight.
Common Gull, Lesser Black-backed Gull	Unlikely to visit site although may be seen overflying.

Additional species on the RSPB Amber List that may nest within the survey site include Willow Warbler and those that might visit include Snipe, Meadow Pipit and Tawny Owl, whilst Swift is occasionally likely to be seen aerially hunting but not to alight.

The proposed development will require the removal of the planted woodland and scrub located within the application site. It is likely, therefore, that a small number of nest sites and feeding territories of some of these species will be lost.

3.3.9 Reptiles

No reptiles or their signs were seen during the present survey but species included in the SEWBRc dataset that have been recorded from within 2km of the survey site are Common Lizard, Slow-worm and Grass Snake.

The habitats within the survey site are considered to be generally unsuitable to support reptiles. However, potential habitat is present around the sunny edges of the grassland in the south of the site and along the open section of the grassy track connecting the grassland to the road along the north-eastern site boundary (see figure 3). Here there may be potential for small numbers of Slow-worm and/or Common Lizard to occur.

3.3.10 Amphibians

No amphibians or their signs were seen during the present survey but species additional to the European Protected Great Crested Newt (see paragraph 3.3.4) included in the SEWBRc dataset that have been recorded from within 2km of the survey site are Common Frog, Common Toad and Palmate Newt.

There is no amphibian breeding habitat located within the survey site but small numbers of terrestrial-phase amphibians (principally Common Frog, Common Toad and Palmate Newt) may occur in damp and shaded areas and may take refuge in edge habitats similar to those attractive to reptiles (see figure 3).

3.3.11 Protected Invertebrates

An assessment of protected invertebrates has not been carried out for this appraisal but the range of habitats within the survey site is generally unsuitable to support such species.

There are records of three protected butterfly species from within 2km of the survey site on the SEWBRc database but no habitat suitable to support them is located within the site.

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Species of Principal Importance

Species of Principal Importance for Conservation of Biological Diversity listed under section 7 of the Environment (Wales) Act 2016 include a range of species of all groups many of which are also included under European or national protection legislation and have been addressed above. Additional species which, by their inclusion on the section 7 list, become material considerations in the planning process, include various mammals such as Hedgehog, Brown Hare and Harvest Mouse, many birds, reptiles and amphibians, fish and invertebrates, the latter including various species of moths and butterflies.

Additional to the faunal species or species groups already addressed above, only Hedgehog, Polecat and various invertebrates may potentially occur within the survey site or its vicinity. Section 7 species included on the SEWBRc database recorded from within 2km of the survey site are listed at Table 2.3, above.

3.3.12 Hedgehog

There are nineteen records of Hedgehog from within 2km of the survey site included in the SEWBRc database, the closest being 480m from the centre of the site and the most recent, 2018.

Hedgehogs seek cover in dense vegetation and under banks, etc and may occur from time to time within the survey site. When undertaking site clearance work or vegetation removal, site personnel should pay special attention to the possible presence and safeguard of animals.

3.3.13 Polecat

Four Polecat entries are included on the SEWBRc dataset, three of which refer to the same observation made on 27th April 1997 at a location 2044m from the survey site.

The Polecat is a very wide-ranging species, is elusive and difficult to survey. Rare visits may be assumed but its widely ranging activity would indicate that the loss of a very small area of habitat resulting from the development of the application site will be of no significance to this species.

3.3.14 Section 7 Birds

All designated bird species have been assessed at paragraph 3.3.8, above.

3.3.15 Section 7 Invertebrates

An assessment of section 7 invertebrates has not been carried out for this appraisal but the range of habitats within the survey site that is suitable to support a wide range of species is mainly limited to planted woodland, scrub and sparse grassland, all of which are of secondary or recent origin.

Records from within 2km of the survey site on the SEWBRc database include one beetle, three butterfly species and three moth species. Of these, the sparse grassland on colliery spoil within the site may be suitable to support Dingy Skipper and Grayling butterflies and Grass Rivulet moth, although the area of this habitat to be disturbed by the development of the application site is small. The other species listed by SEWBRc are unlikely to visit the site.

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The development of the application site is unlikely to be of significance to local populations of any section 7 invertebrates.

Other Significant Species

3.3.16 Stoat and Weasel

Stoat, in common with Weasel, is designated as a Priority Species by Natural Resources Wales. A single record of Stoat is included on the SEWBRc dataset from within 2km of the survey site.

These species are wide ranging, elusive and difficult to survey. Their presence in small numbers must be assumed but they are adaptable and the loss of habitat resulting from the development of the application site is unlikely to be of significance to their wellbeing.

3.3.17 Amber List Birds

All designated bird species have been assessed at paragraph 3.3.8, above.

3.3.18 Other significant Invertebrates

An assessment of significant invertebrates has not been carried out for this appraisal.

Records of significant invertebrates from within 2km of the survey site held on the SEWBRc database, principally those included on Red Data Lists, include ten beetle species, one centipede, two crane fly species, nine true fly species, two moth species and four weevil species. The range of habitats within the survey site suitable to support invertebrates is mainly limited to planted woodland, scrub and sparse grassland, all of which are of secondary or recent origin.

The development of the application site will result in the loss of small areas of secondary woodland, scrub and sparse grassland which, taken in the context of the extent of these habitats present in the local area, is of small significance.

Other Species

3.3.19 No additional protected or significant species are likely to be affected by the proposed development.

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4. ECOLOGICAL ASSESSMENT

4.1. Assessment criteria

Impact significance has been assessed for each of the features using a three-stage process: An assessment of ecological value; an assessment of the magnitude of the likely impacts of the proposals; and a determination of impact significance based on a combination of ecological value and magnitude of impact.

Ecological Significance

Each feature has been classified according to its ecological significance using the examples provided in Table 4.1.

Table 4.1. Assessment of Ecological Significance

Value	Examples
International	- Internationally designated or proposed sites such as Ramsar Sites, Special Protection Areas, Biosphere Reserves and Special Areas of Conservation, or otherwise meeting criteria for international designation. - Sites supporting populations of internationally important species.
UK/National	- Nationally designated sites such as Sites of Special Scientific Interest (SSSIs), or non-designated sites meeting SSSI selection criteria, National Nature Reserves (NNRs), Nature Conservancy Review (NCR) Grade 1 sites, viable areas of key habitats within the UK Biodiversity Action Plan. - Sites supporting viable breeding populations of Protected and Red Data Book (RDB) species (excluding scarce species), or supplying critical elements of their habitat requirements.
Regional	- Sites containing viable areas of threatened habitats listed in a regional Biodiversity Action Plan, comfortably exceeding Site of Importance for Nature Conservation (SINC) criteria, but not meeting SSSI selection criteria. - Sites supporting viable populations of Nationally Scarce species or those included in the Regional Biodiversity Action Plan on account of their rarity, or supplying critical elements of their habitat requirements.
County	- Sites meeting the criteria for a county or metropolitan area designation (such as SINC), which may include amenity and educational criteria in urban areas. Ancient semi-natural woodland. Designated Local Nature Reserves. Sites containing viable areas of any key habitat type identified in the Local Biodiversity Action Plan (LBAP). - Sites supporting viable breeding populations of species known to be county/metropolitan rarities e.g. featuring in county 'red data book' or LBAP, or supplying critical elements of their habitat requirements.
District	Undesignated sites, or features considered appreciably to enrich the habitat resource within the context of the Borough or District, or included in the Borough or District LBAP. Amenity and educational functions will be recognised in urban areas.

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	Sites with viable breeding populations of species listed as rare in the District or Borough LBAP or supplying critical elements of their habitat requirements.
Local	Undesignated sites, or features considered appreciably enriching the habitat resource within the context of the Parish or neighbourhood (e.g. a species-rich hedgerow).
Not important	Low-grade and widespread habitats or feature not affected by proposals.

Magnitude and Extent of Impact

The magnitude of each predicted impact has been assessed on a scale of High, Medium, Low, Minimal, Negligible and Potential Net Gain according to the criteria in Table 4.2.

Table 4.2. Criteria for determining Magnitude and Extent of Impact

Magnitude	Criteria
High	Loss of about 50% or more of the site area. Other effects (e.g. disturbance or damage arising from pollution) including indirect impacts having an adverse impact equivalent in nature conservation terms to a loss of >50% of the site area.
Medium	Loss affecting 20-49% of the site area. Other effects (e.g. disturbance or damage arising from pollution) including indirect impacts having an adverse impact equivalent in nature conservation terms to a loss of 20-49% of the site area.
Low	Loss affecting 4-19% of the site area. Other effects (e.g. disturbance or damage arising from pollution) including indirect impacts having an adverse impact equivalent in nature conservation terms to a loss of 4-19% of the site area.
Minimal	Loss affecting up to 4% of the site area. Other effects (e.g. disturbance or damage arising from pollution) including indirect impacts having an adverse impact equivalent in nature conservation terms to a loss of 4% of the site area.
Negligible	No anticipated effects resulting from the implementation of the proposals.
Potential Net Gain	Mitigation will seek to increase the extent of existing habitats or replace lost habitats with larger areas of suitable habitats. Such areas will be established and, where significant species are to be displaced, in a state ready for colonisation prior to any proposed habitat disturbance.

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Table 4.3. illustrates how significance has been assigned to the impact, based on a combination of the value of the feature being assessed. This has been expressed on a five-point scale ranging from Severe to Negligible as shown below.

Table 4.3. Criteria for determining Significance of Impact

Impact Magnitude and extent	Ecological Significance						
	Inter-national	UK/National	Regional	County	District	Local	Not important
High	Severe	Major	Major	Major	Moderate	Minor	Minor
Medium	Major	Major	Moderate	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Minor	Minor	Negligible	Negligible
Minimal	Minor	Minor	Negligible	Negligible	Negligible	Negligible	Negligible
No Impact	Negligible	Negligible	No impact	No impact	No impact	No impact	No impact
Potential net gain	Potential net gain	Potential net gain	Potential net gain	Potential net gain	Potential net gain	Potential net gain	Potential net gain

4.2. Impact Assessment of protected sites, significant habitats and significant species**4.2.1. Protected and other Designated Sites**

No statutory or non-statutory protected sites (including nature reserves or other sites of nature conservation interest) are located within the survey site. Potential impact of the proposed development on such sites in the area are as follows.

European Protected Sites

There no European Protected Sites including Special Areas of Conservation (SAC) and Special Protection Areas (SPA) located in the area and none will be adversely impacted by the proposed development:

Impact during the construction phase:

NEGLECTIBLE (International ecological value, No Impact)

Residual Impact:

NEGLECTIBLE (International ecological value, No Impact)

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Nationally Protected Sites

The only Sites of Special Scientific Interest (SSSI) located within 2km of the survey site are

- **Cwm Glo a Glandryys SSSI**, an extensive area of unimproved grasslands, woodlands and habitats developed on colliery spoil, the closest point of which is located some 150m to the south of the survey site boundary. Despite its close proximity to the proposed development site, it is anticipated that construction works and the subsequent bringing of the site into beneficial use, will have no impact upon the SSSI.

Impact during the construction phase:

NEGLIGIBLE (UK/National ecological value, No Impact)

Residual Impact:

NEGLIGIBLE (UK/National ecological value, No Impact)

- **Cwm Taf Fechan Woodlands SSSI** located about 1.25km to the north which is shown on the map provided by SEWBRc reproduced at appendix 8. This site will not be impacted by the proposed development.

Impact during the construction phase:

NEGLIGIBLE (UK/National ecological value, No Impact)

Residual Impact:

NEGLIGIBLE (UK/National ecological value, No Impact)

Other SSSIs located in the area include

- **Penmoelallt SSSI** located about 3km to the north-west
- **Bryncarnau Grasslands Llwydcoed SSSI**, located some 3.5km to the west

None of these sites will be impacted by the proposed development.

Impact during the construction phase:

NEGLIGIBLE (UK/National ecological value, No Impact)

Residual Impact:

NEGLIGIBLE (UK/National ecological value, No Impact)

Designated sites of regional and county wildlife significance, Local Nature Reserves, etc

The **Cwm Taf Fechan Woodlands Local Nature Reserve** is located about 1.25km to the north of the survey site and the **Taf Fechan Wildlife Trust Nature Reserve** is located just under 2km to the north of the survey site. Both are contained within the upper part of the Taf Fechan Woodlands SSSI and neither of these sites will be impacted by the proposed development.

Impact during the construction phase:

NO IMPACT (Regional/County ecological value, No Impact)

Residual Impact:

NO IMPACT (Regional/County ecological value, No Impact)

There are no other sites of county ecological significance located within at least 2km of the survey site.

4.2.2. **Sites of Importance for Nature Conservation (County Wildlife Sites)**

Merthyr Tydfil County Borough Council have identified a series of Sites of Importance for Nature Conservation (SINC) (also known as Wildlife Sites). Fourteen SINC's lie within about 2km of the survey site and are shown on the SEWBRc map at appendix 8.

None of these sites will be impacted by the proposed development.

Impact during the construction phase:

NO IMPACT (County ecological value, No Impact)

Residual Impact:

NO IMPACT (County ecological value, No Impact)

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4.2.3. Designated Ancient Semi-natural Woodland

Areas of designated ancient semi-natural woodland located within 2km of the survey site include nine woods identified as Ancient Semi Natural Woodlands (ASNW) totalling 15ha mostly located near the southern edge of the search area and three Restored Ancient Woodland Sites (RAWS) totalling 18ha in the northern part of the search area. These are shown on the map provided by SEWBRc reproduced at appendix 8. Small areas of Plantation on Ancient Woodland Sites (PAWS) and Ancient Woodland Sites of Unknown Category (AWSU) have been identified at the southern edge of the search area.

None of these sites will be affected by the proposed development.

Impact during the construction phase:

NO IMPACT (County ecological value, No Impact)

Residual Impact:

NO IMPACT (County ecological value, No Impact)

4.2.4. Open Access Land

There are large areas of open access land located to the west and south-west of the survey site, much of which is of wildlife interest and parts are included in the Cwm Glo a Glandrys SSSI. The closest areas include Cwm Glo, about 1km to the south-west, and areas extending to Winch Fawr and Heol Gerrig about 2km to the west and 1km to the north-west respectively.

None of this land will be affected by the proposed development.

Impact during the construction phase:

NO IMPACT (County ecological value, No Impact)

Residual Impact:

NO IMPACT (County ecological value, No Impact)

4.2.5. Regionally Important Geological Sites (RIGS)

Nant Ffrwyd, located about 1.5km north-west of the survey site, is designated as a Regionally Important Geological Site (RIGS).

Impact during the construction phase:

NO IMPACT (Regional ecological value, No Impact)

Residual Impact:

NO IMPACT (Regional ecological value, No Impact)

No other designated sites will be adversely impacted by the proposed development.

4.2.6. Habitats

Habitats of European Significance

No habitats of European significance listed at Annex I of the *European Habitats Directive* are present within the survey site or its vicinity.

Impact during the construction phase:

NEGLIGIBLE (International ecological value, No Impact)

Residual Impact:

NEGLIGIBLE (International ecological value, No Impact)

Section 7 Habitats of Principal Importance and UK BAP Priority Habitats

All the habitats located within the survey site are of secondary or recent origin and are established on colliery spoil that has been regraded within about the last thirty years. Open Mosaic Habitats on Previously Developed Land (OMHoPDL) is a *Habitat of Principal Importance for Conservation of Biological Diversity* under section 7 of the Environment (Wales) Act 2016 and, prior to the regrading and planting, the survey site would probably

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have qualified as a good example of this habitat. However, although established on colliery spoil, the planted woodland, sown grassland and colonizing scrub cannot now be considered as OMHoPDL.

No section 7 *Habitats of Principal Importance for Conservation of Biological Diversity* and UK Biodiversity Action Plan Priority Habitats occur within the survey site or its immediate vicinity.

Impact during the construction phase:

NEGLIGIBLE (UK/National ecological value, No Impact)

Residual Impact:

NEGLIGIBLE (UK/National ecological value, No Impact)

Local Biodiversity Action Plan Habitats

No habitats included in the Merthyr Tydfil LBAP are located within, or in the immediate vicinity of the survey site.

Impact during the construction phase:

NO IMPACT (County ecological value, No Impact)

Residual Impact:

NO IMPACT (County ecological value, No Impact)

Hedgerows, including *Important Hedgerows*

No hedgerows or *Important Hedgerows* as defined in the Hedgerow Regulations 1997 are located within or in the immediate vicinity of the survey site or will be affected by the proposed development.

Impact during the construction phase:

NO IMPACT (County ecological value, No Impact)

Residual Impact:

NO IMPACT (County ecological value, No Impact)

Other habitats

Planted broad-leaf woodland

The broad-leaf woodland planted on regraded colliery spoil that occupies the greatest part of the survey site cannot be regarded as any more than of local interest but most of this habitat within the application site will be lost as a result of the development. However, this constitutes only a small fraction of the total of similar habitat within the area and is judged to comprise a loss of no more than between 4% and 19% of the whole in the area. Its replacement with houses and gardens has potential to provide for a greater diversity of wildlife, albeit of different character.

Impact during the construction phase:

NEGLIGIBLE (Local ecological value, Low magnitude)

Residual Impact:

NEGLIGIBLE (Local ecological value, Low magnitude)

Residual Impact assuming new houses and gardens mitigate losses to some degree:

NEGLIGIBLE (Local ecological value, Minimal magnitude)

Scrub

The scrub established on the regraded colliery spoil inside the north-eastern boundary of the survey site is also of local interest and most of this habitat within the application site will be lost as a result of the development. However, it constitutes only a small fraction of the total of similar habitat within the area and is judged to comprise a loss of no more than between 4% and 19% of the whole in the area. Its replacement with houses and gardens has potential to provide for a greater diversity of wildlife, albeit of different character.

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Impact during the construction phase:

NEGLIGIBLE (Local ecological value, Low magnitude)

Residual Impact: **NEGLIGIBLE** (Local ecological value, Low magnitude)

Residual Impact assuming new houses and gardens mitigate losses to some degree:
NEGLIGIBLE (Local ecological value, Minimal magnitude)

Sparse grassland planted on colliery spoil

The grassland established on regraded colliery spoil in the southern part of the survey site can also be regarded as of local interest and the small area of this habitat located within the application site will be lost as a result of the development. However, it constitutes only a small fraction of the total of similar habitat in the vicinity and is judged to comprise a loss of no more than 4% of the whole in the area. Its replacement with houses and gardens has potential to provide for a greater diversity of wildlife, albeit of different character.

Impact during the construction phase:

NEGLIGIBLE (Local ecological value, Minimal magnitude)

Residual Impact: **NEGLIGIBLE** (Local ecological value, Minimal magnitude)

Residual Impact assuming new houses and gardens mitigate losses to some degree:
NEGLIGIBLE (Local ecological value, Minimal magnitude)

Ecological Connectivity

Habitat connectivity through and around the survey site is probably not of high significance as habitats to the north and east are already isolated to a high degree by existing development. The scheme as proposed will result in a minor loss of habitat connectivity although north-south connectivity will be maintained along the sides of the nearby A470 dual carriageway and along the western boundary of the site from Heol Gerrig towards the Cwm Glo SINC. East-west connectivity is already breached by the A470 to the east of the survey site but will be maintained into the land to the south of Heol Gerrig and the Cwm Glo SINC to the south-west. After the development is completed and reaches maturity, a certain degree of connectivity is likely to be maintained through the site, provided by new landscape and garden plantings.

Impact during the construction phase:

MINOR ADVERSE (Local ecological value, Medium magnitude)

Residual Impact: **NEGLIGIBLE** (Local ecological value, Minimal magnitude)

4.2.7. Plants

Protected Plant Species

Bluebell is protected against sale by its inclusion on schedule 8 of the Wildlife and Countryside Act 1981 (as amended). No plants were recorded during the survey and it is unlikely to occur on the recently regraded colliery spoil substrate, therefore it is unlikely to be affected by the development. However, even were there to be a small number of plants present, their damage at this location would be of little significance when considered in the context of the frequency of Bluebell populations in the area as a whole.

Impact during the construction phase:

NEGLIGIBLE (UK/National ecological value, No Impact)

Residual Impact: **NEGLIGIBLE** (UK/National ecological value, No Impact)

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Plants of International Significance

No plants included on Annex II of the Habitats Regulations occur within the survey site and none will be affected by the proposed development.

Impact during the construction phase:

NEGLIGIBLE (International ecological value, No Impact)

Residual Impact:

NEGLIGIBLE (International ecological value, No Impact)

No species included by the Countryside Council for Wales in category A of its list of Globally Threatened Plant Species were observed within the survey site during the survey, neither are any such species included in the SEWBRc data from within 2m of the site.

Impact during the construction phase:

NEGLIGIBLE (International ecological value, No Impact)

Residual Impact:

NEGLIGIBLE (International ecological value, No Impact)

Primrose was included by the Countryside Council for Wales in category B of its list of Globally Threatened Plant Species. Although this species was not recorded during the present survey, there is a chance that it may occur within the application site. The possible loss of a few plants at this location is of little significance when considered in the context of the frequency of Primrose populations in the area as a whole.

Impact during the construction phase:

NEGLIGIBLE (International ecological value, No Impact)

Residual Impact:

NEGLIGIBLE (International ecological value, No Impact)

Section 7 Plant Species of Principal Importance and UK Biodiversity Action Plan Priority Plant Species

No Plant Species of Principal Importance occur within the survey site and none will be affected by proposed site works.

Impact during the construction phase:

NEGLIGIBLE (UK/National ecological value, No Impact)

Residual Impact:

NEGLIGIBLE (UK/National ecological value, No Impact)

Local Biodiversity Action Plan Plant Species

No plant species which are subjects of Species Action Plans in the Merthyr Tydfil LBAP occur within the survey site and none will be affected by the proposed development.

Impact during the construction phase:

NO IMPACT (County ecological value, No Impact)

Residual Impact:

NO IMPACT (County ecological value, No Impact)

Plant Species of County or Local Significance

Spiked Sedge, Dwarf Elder and Blue Fleabane were recorded during the present survey and can be considered to be of County Borough importance because of their rarity in the County Borough. Dwarf Elder is also designated by local experts as Locally Important in the SEWBRc area.

Both Dwarf Elder and Blue Fleabane grow outside the application site (TN1 and TN15, respectively on figure 2) and will not be affected by the proposed development.

Impact during the construction phase:

NO IMPACT (County ecological value, No Impact)

Residual Impact:

NO IMPACT (County ecological value, No Impact)

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A single plant of Spiked Sedge was found growing within the application site (TN13 on figure 2) and two additional plants were found outside the survey site at TN15. The single plant within the application site will be lost to the development but could easily be translocated to a site of safety nearby. The TN15 plants will not be affected.

Impact during the construction phase:

MINOR ADVERSE (County ecological value, Low magnitude)

Residual Impact assuming translocation of the single plant is successful:

NEGLIGIBLE (County ecological value, Minimal magnitude)

4.2.8. European Protected Fauna

Bats

Bats and their places of rest/shelter (ie roosts) are fully protected and a licence to disturb a European Protected Species is required to permit any disturbance to a roost whether in a building, a tree or elsewhere.

It is anticipated that no roost sites will be disturbed or otherwise affected by the proposed development. The loss of small areas of secondary woodland and scrub which potentially provide a minor part of the feeding resource of local bat populations when considered in the wider context, are likely to be of little significance to the well-being or holding capacity of the area to support the existing bat populations.

Impact during the construction phase:

MINOR ADVERSE (International ecological value, Minimal magnitude)

Residual Impact:

MINOR ADVERSE (International ecological value, Minimal magnitude)

Mitigation of habitat loss may be achieved by the provision of bat roost features in the fabric of houses to be constructed on the site. This, associated with appropriate landscape and garden plantings, will reduce the impact on bats to 'no impact' or even 'potential net gain'.

Residual Impact with mitigation as recommended:

NEGLIGIBLE to POTENTIAL NET GAIN

(International ecological value, No impact to Potential net gain)

If any bats or roosts were to be found during site clearance operations, all work must stop immediately and advice sought from the site ecologist.

Attention is drawn to the best practice protocol designed to minimise impact to bats resulting from tree felling and lopping work, which is reproduced at appendix 5.

Otter

Otters and their places of rest/shelter (ie holts, lying-up sites and breeding sites) are fully protected and a licence to disturb a European Protected Species is required to permit any disturbance to individual animals or their places of rest. Otter activity/presence is known along the Afon Taf and there are records from within 2km of the survey site, the most recent being in 2010. However, no signs of Otter were found during the present survey and it is extremely unlikely that animals would be attracted to the site due to the absence of any water courses in the near vicinity, the absence of any potential food resource within the site and the urban nature of the land between the site and the Afon Taf which is subject to frequent disturbance by human and dog activity.

Impact during the construction phase:

NEGLIGIBLE (International ecological value, No impact)

Residual impact:

NEGLIGIBLE (International ecological value, No impact)

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Dormouse

No signs of Dormice were seen during the survey and, although the habitats within the survey site might sustain Dormice for some times during the year, none are considered to provide optimal habitat capable of sustaining animals throughout the year. Furthermore, the site's remoteness from the location of known past Dormouse records and imperfect habitat connectivity would suggest that it is unlikely that animals are present within, or visit the site.

Impact during the construction phase:

NEGLIGIBLE (International ecological value, No impact)

Residual impact:

NEGLIGIBLE (International ecological value, No impact)

Great Crested Newt

Great Crested Newts, their breeding ponds and their places of rest/shelter are fully protected and a licence to disturb a European Protected Species is required to permit any disturbance to individual animals or their places of rest. The SEWBRc data includes 87 records of Great Crested Newt recorded within 2km of the survey site, the closest of which is 637m from the centre of the site and the most recent was made in 2014. Breeding ponds are located in particular in the Cwm Glo area and in areas of colliery patch workings. Ponds are also located to the north-west of Heol Gerrig.

No breeding ponds are located within the survey site which is beyond the generally accepted distance of c.500m (maximum) that it is thought Great Crested Newts may travel away from their breeding sites during their terrestrial phase. Furthermore, little habitat suitable for terrestrial phase animals to take refuge is located within the survey site.

It is considered unlikely that Great Crested Newts occur within, or visit the survey site. However, if any were to be found during site clearance operations, all work must stop immediately and advice sought from the site ecologist.

Impact during the construction phase:

NEGLIGIBLE (International ecological value, No impact)

Residual impact:

NEGLIGIBLE (International ecological value, No impact)

Other European Protected Species

No habitat suitable to support other European Protected Species (eg Marsh Fritillary butterfly, Atlantic Salmon) is located within the survey site, neither is it anticipated that any such species will visit the site.

Impact during the construction phase:

NEGLIGIBLE (International ecological value, No impact)

Residual impact:

NEGLIGIBLE (International ecological value, No impact)

4.2.9. Nationally Protected Faunal Species and Faunal Species of Principal Importance**Badger**

Badgers and their places of rest/shelter (setts) are fully protected under the Protection of Badgers Act 1992 and a licence is required to permit any disturbance to individual setts. This is generally taken to mean that any work carried-out by mechanical plant within 30m of an active sett requires mitigation to be approved and permitted by the issue of a licence by NRW.

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No signs of Badger were observed during the present survey although the habitat is suitable, including dense woodland and scrub suitable for sett concealment and the colliery spoil substrate permitting relatively easy excavation. However, the spoil is unlikely to encourage the growth or development of a particularly abundant foraging resource. The close proximity of human habitation and the likelihood of disturbance by dogs are also likely to discourage Badgers from occurring within, or visiting the site. The development is unlikely to have any significant impact on the local Badger population. However, if any animals or their signs were to be found during site clearance operations, all work must stop immediately and advice sought from the site ecologist.

Impact during the construction phase:

NEGLIGIBLE (UK/National ecological value, No impact)

Residual impact:

NEGLIGIBLE (UK/National ecological value, No impact)

Attention is further drawn to the best practice protocol designed to minimise impact to Badgers during development works, which is reproduced at appendix 6.

Water Vole

There is no habitat within, or in the vicinity of the site suitable to support the species.

Impact during the construction phase:

NEGLIGIBLE (UK/National ecological value, No impact)

Residual impact:

NEGLIGIBLE (UK/National ecological value, No impact)

Birds

All nests occupied or being built by breeding birds are protected against disturbance by the Wildlife and Countryside Act 1981. The nesting season is generally taken to be March to August inclusive but it should be borne in mind that some species nest outside this period. Whenever possible, site clearance should be undertaken between September and February inclusive and preferably mid-September to the end of October to avoid disturbance to hibernating animals such as bats, dormice, reptiles and amphibians. If it is necessary to disturb or remove any potential bird nesting habitat during the nesting season, an experienced ornithologist must assess the site immediately prior to the commencement of clearance operations in order to confirm that no active nests will be disturbed. If any active nests are found, work must cease in that area until the ornithologist certifies that no active nests are present.

The proposed development will require the removal of the planted woodland and scrub located within the application site. It is likely, therefore, that a small number of nest sites and feeding territories of some bird species will be lost. However, provided that vegetation removal and site clearance is undertaken outside the bird nesting season, such a loss will be of little impact to the local populations of most species when taken in a local area context.

Anticipated Impact on local populations of nesting birds displaced by the loss of habitat during the construction phase:

MODERATE ADVERSE to NEGLIGIBLE

(UK/National to local ecological value, Low magnitude)

Anticipated Residual impact on local populations of nesting birds displaced by the loss of habitat:

MODERATE ADVERSE to NEGLIGIBLE

(UK/National to local ecological value, Low magnitude)

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Anticipated Residual Impact assuming some birds are accommodated in nesting features provided in new house constructions and landscape and garden plantings are appropriate to provide cover and food resources:

MINOR ADVERSE to NEGLIGIBLE

(UK/National to local ecological value, Minimal magnitude)

Reptiles

No reptiles or their signs were seen during the present survey but species recorded from within 2km of the survey site are Common Lizard, Slow-worm and Grass Snake.

The habitats within the survey site are considered to be generally unsuitable to support reptiles. However, potential habitat is present around the sunny edges of the grassland in the south of the site and along the open section of the grassy track connecting the grassland to the road along the north-eastern site boundary (see figure 3). Here there may be potential for small numbers of Slow-worm and/or Common Lizard to occur.

In order to minimize potential harm to reptiles, amphibians or other fauna, during site clearance work or levelling ground-surface irregularities, a visual "finger-tip" search of the habitat should be undertaken and initial disturbance be carried out with hand-tools prior to the use of mechanical plant. Site personnel should be mindful of the likely presence of reptiles and amphibians and be instructed to avoid disturbing, damaging or killing them. Emphasis should be given to the protection afforded to reptiles and the potential consequences of killing animals during site work which would be construed as 'intentional killing' as defined in the protection legislation. In order to provide potential refuges for reptiles, habitat piles constructed from arisings produced during site clearance works should be sited in convenient undisturbed areas as advised by the site ecologist.

Anticipated impact during the construction phase:

MINOR ADVERSE (UK/National ecological value, Minimal magnitude)

Residual impact without mitigation:

MINOR ADVERSE (UK/National ecological value, Minimal magnitude)

Anticipated Impact following the completion of the development assuming habitat piles have been located and constructed as advised by the site ecologist:

NEGLIGIBLE to POTENTIAL NET GAIN

(UK/National ecological value, No impact to potential net gain)

Should more than a few animals be encountered during site clearance works, the site ecologist will need to reconsider the reptile clearance method which may include the provision of exclusion fencing and trapping of individual animals to translocate them from the site to a safe area nearby.

Amphibians

No amphibians or their signs were seen during the present survey but species additional to the European Protected Great Crested Newt recorded from within 2km of the survey site are Common Frog, Common Toad and Palmate Newt.

There is no amphibian breeding habitat located within the survey site but small numbers of terrestrial-phase amphibians (principally Common Frog, Common Toad and Palmate Newt) may occur in damp and shaded areas and may take refuge in edge habitats similar to those attractive to reptiles (see figure 3).

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In order to minimize potential harm to reptiles, amphibians or other fauna, during site clearance work or levelling ground-surface irregularities, a visual "finger-tip" search of the habitat should be undertaken and initial disturbance be carried out with hand-tools prior to the use of mechanical plant. Site personnel should be mindful of the likely presence of reptiles and amphibians and be instructed to avoid disturbing, damaging or killing them. In order to provide potential refuges for terrestrial-phase amphibians, habitat piles constructed from arisings produced during site clearance works should be sited in convenient undisturbed areas as advised by the site ecologist.

Anticipated impact during the construction phase:

MINOR ADVERSE (UK/National ecological value, Minimal magnitude)

Residual impact without mitigation:

MINOR ADVERSE (UK/National ecological value, Minimal magnitude)

Anticipated Impact following the completion of the development assuming habitat piles have been located and constructed as advised by the site ecologist:

NEGLIGIBLE to POTENTIAL NET GAIN

(UK/National ecological value, No impact to potential net gain)

Hedgehog

Hedgehogs seek cover in dense vegetation and under banks, etc and may occur from time to time within the survey site. When undertaking site clearance work or vegetation removal, site personnel should be mindful of the possibility of the presence of Hedgehogs on the site and ensure that any animals found come to no harm. In order to minimize potential harm to Hedgehogs, the same advice should be followed as recommended for reptiles and amphibians during site clearance work or levelling ground-surface irregularities. A visual "finger-tip" search of the habitat should be undertaken and initial disturbance be carried out with hand-tools prior to the use of mechanical plant. In order to provide potential refuges for Hedgehogs, habitat piles constructed from arisings produced during site clearance works should be sited in convenient undisturbed areas as advised by the site ecologist.

Anticipated Impact during the construction phase:

MINOR ADVERSE (UK/National ecological value, Minimal magnitude)

Anticipated Impact after the completion of works assuming habitat piles have been located and constructed as advised by the site ecologist:

NEGLIGIBLE to POTENTIAL NET GAIN

(UK/National ecological value, No impact to potential net gain)

Polecat

The Polecat is a very wide-ranging species and may visit the survey site rarely but its widely-ranging activity would indicate that the loss of a very small area of habitat resulting from the development will be of no significance to this species.

Impact during the construction phase:

NEGLIGIBLE (UK/National ecological value, No impact)

Residual impact:

NEGLIGIBLE (UK/National ecological value, No impact)

Invertebrates

An assessment of protected invertebrates has not been carried out for this appraisal but the range of habitats within the survey site is generally unsuitable to support such species. There are records of three protected butterfly species from within 2km of the survey site but no habitat suitable to support them is located within the site.

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Impact during the construction phase on protected invertebrates:

NEGLECTIBLE (UK/National ecological value, No impact)

Residual impact on protected invertebrates:

NEGLECTIBLE (UK/National ecological value, No impact)

The range of habitats within the survey site that is suitable to support a wide range of section 7 invertebrates is mainly limited to planted woodland, scrub and sparse grassland, all of which are of secondary or recent origin. Records from within 2km of the survey site on the SEWBRReC database include one beetle, three butterfly species and three moth species. Of these, the sparse grassland on colliery spoil within the site may be suitable to support Dingy Skipper and Grayling butterflies and Grass Rivulet moth, although the area of this habitat to be disturbed by the development of the application site is small. The other species listed by SEWBRReC are unlikely to visit the site. The development of the application site is unlikely to be of significance to local populations of any section 7 invertebrates.

Anticipated Impact during the construction phase on section 7 invertebrates:

MINOR ADVERSE (UK/National ecological value, Minimal magnitude)

Anticipated Residual impact on section 7 invertebrates:

MINOR ADVERSE (UK/National ecological value, Minimal magnitude)

Other significant invertebrates are principally those included on Red Data Lists. Such species recorded from within 2km of the survey site comprise ten beetle species, one centipede, two crane fly species, nine true fly species, two moth species and four weevil species. The range of habitats within the survey site suitable to support invertebrates is limited but the proposed development will result in the loss of small areas of secondary woodland, scrub and sparse grassland which, taken in the context of the extent of these habitats present in the local area, is of small significance.

Anticipated Impact during the construction phase on section 7 invertebrates:

MINOR ADVERSE (UK/National ecological value, Minimal magnitude)

Anticipated Residual impact on section 7 invertebrates:

MINOR ADVERSE (UK/National ecological value, Minimal magnitude)

Stoat and Weasel

Stoat and Weasel are designated as Priority Species by Natural Resources Wales. These species are wide ranging and their presence in small numbers must be assumed but they are adaptable and the loss of habitat resulting from the development of the application site is unlikely to be of significance to their wellbeing.

Impact during the construction phase:

MINOR ADVERSE (UK/National ecological value, Minimal magnitude)

Residual impact:

MINOR ADVERSE (UK/National ecological value, Minimal magnitude)

4.2.10. Other Nationally Significant Fauna

No other nationally protected or other significant faunal species or the habitats upon which they depend are likely to be affected by the proposed development.

Impact during the construction phase:

NEGLECTIBLE (UK/National ecological value, No impact)

Residual impact:

NEGLECTIBLE (UK/National ecological value, No impact)

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5. ECOLOGICAL RECOMMENDATIONS and OPPORTUNITIES**5.1 Further Survey**

It is not considered necessary to carry out any further ecological surveys provided that the clearance of trees, scrub and rank vegetation is undertaken as described at paragraph 5.4.

5.2 Vegetation retentions

Prior to the commencement of any works on site, trees and other vegetation that it is planned to retain, must be identified and marked-out on the ground with a view to their protection from all disturbance during the construction period.

Particular attention must be paid to preventing the disturbance of the root spread of large trees to be retained within, and adjacent to the site, including those rooted outside the site. In addition, their canopy spreads are vulnerable to damage or intentional or accidental lopping when construction works are being undertaken. Existing trees to be retained should be protected during construction operations by establishing Root Protection Zones to British Standard BS5837 (revised 2005) and their canopy spreads not reduced. Areas of other vegetation to be retained should also be identified by establishing temporary high-visibility fencing around their perimeters. Protection fencing must be maintained in serviceable condition for the whole duration of the construction phase.

No additional soils of other material must be placed on top of existing root spreads, whether temporarily or permanently, which would result in the burial of roots to a greater depth than existing as the exclusion of air from the soil will ultimately kill the trees.

All site personnel must be instructed to comply with these requirements at all times.

A landscape plan incorporating an appropriate ecological mitigation strategy should be drafted as the scheme is progressed.

5.3 Translocation of Spiked Sedge

A single plant of Spiked Sedge, a species of County borough significance, was found growing within the application site at TN13 (see figure 2) which will be lost to the development. It is recommended that this plant is translocated by hand to a nearby safe site under the supervision of the site ecologist.

5.4 Clearance of trees, scrub and rank vegetation

Whenever possible, site clearance should be undertaken outside the bird nesting season, ie, between September and February inclusive and preferably in mid-September to the end of October to avoid disturbance to hibernating animals such as bats, reptiles, amphibians and Hedgehog.

It is anticipated that no potential bat roost sites will be disturbed or otherwise affected by the proposed development. However, trees should be cleared bearing due regard to the possibility that bats could be encountered unexpectedly. Any trees that are found to have roost potential that have not been identified during the present appraisal should be further examined by a bat ecologist.

All site operations should avoid unnecessary disturbance to bat habitat and best practice methods designed to minimise impact on bats resulting from tree felling and lopping should be employed. These are outlined at appendix 5. If any bats or roosts were to be found during site clearance operations, all work must stop immediately and advice sought from the site ecologist.

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In order to minimize potential harm to reptiles, terrestrial phase amphibians, Hedgehogs and other fauna during site clearance work or when levelling ground irregularities, a visual “finger-tip” search of the habitat identified as “Potential reptile habitat” (see figure 3), should be undertaken by the site ecologist. This search must be undertaken immediately prior to, and during the removal of the habitat. Initial disturbance to the vegetation and soil must be carried out with hand-tools only and only after the ecologist is satisfied that the area is clear of animals will the use of mechanical plant be permitted.

In order to provide potential refuges for reptiles and terrestrial-phase amphibians, habitat piles constructed from arisings produced during site clearance works should be sited in convenient undisturbed areas as advised by the site ecologist (see paragraph 5.13, below).

5.5 Containment of polluted run-off within the site

Polluted or silt-laden run-off from the construction works or from the site once construction is completed, must be prevented from reaching any watercourse and subsequently the Afon Taf. Run-off from the site must comply at all times with NRW consent standards.

5.6 Bats

It is anticipated that no potential bat roost sites will be disturbed or otherwise affected by the proposed scheme but site operations should avoid unnecessary disturbance to bat habitat and best practice methods designed to minimise impact to bats resulting from tree felling and lopping should be employed. See paragraph 5.4 and appendix 5.

Site personnel should be mindful of the protection afforded to bats and the potential consequences of killing animals or disturbing their roosts during site work which could result in prosecution under the protection legislation.

Mitigation of habitat loss may be achieved by the provision of bat roost features in the fabric of houses to be constructed on the site. This, associated with appropriate landscape and garden plantings, will reduce the impact on bats.

5.7 Reptiles and Amphibians

In order to minimize potential harm to reptiles, terrestrial phase amphibians, site clearance work should include a visual “finger-tip” search as described at paragraph 5.3, above.

Site personnel should be mindful of the likely presence of reptiles and amphibians and be instructed to avoid disturbing, damaging or killing them. Emphasis should be given to the protection afforded to reptiles and the potential consequences of killing animals during site work which would be construed as ‘intentional killing’ as defined in the protection legislation.

In order to provide potential refuges for reptiles and terrestrial-phase amphibians, habitat piles constructed from arisings produced during site clearance works should be sited in convenient undisturbed areas as advised by the site ecologist.

5.8 Great Crested Newt

Great Crested Newts, their breeding ponds and their places of rest/shelter are fully protected and an NRW licence to disturb a European Protected Species is required to permit any disturbance to individual animals or their places of rest.

It is considered unlikely that Great Crested Newts occur within, or visit the survey site. However, if any were to be found during site clearance operations, all work must stop immediately and advice sought from the site ecologist.

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5.9 Badger

Although no signs of Badgers were observed during the present survey, all site personnel must be made aware that animals could occasionally visit the site. It is considered unlikely that Badgers occur within, or visit the survey site but if any holes suspected of being a sett are found during site clearance operations, all work must immediately stop within 30m of the suspected sett and advice sought from the site ecologist.

All excavations left overnight must be provided with a means of escape to prevent any animals becoming trapped, such as a fixed, sloping plank or a sloping side to part of the excavation.

Attention is further drawn to the best practice protocol designed to minimise impact to Badgers during development works, which is reproduced at appendix 6.

5.10 Birds

All nests occupied or being built by breeding birds are protected against disturbance by the Wildlife and Countryside Act 1981. The nesting season is generally taken to be March to August inclusive but it should be borne in mind that some species nest outside this period. Whenever possible, site clearance should be undertaken between September and February inclusive and preferably mid-September to the end of October to avoid disturbance to hibernating animals such as bats, reptiles and amphibians. If it is necessary to disturb or remove any potential bird nesting habitat during the nesting season, an experienced ornithologist must assess the site immediately prior to the commencement of clearance operations in order to confirm that no active nests will be disturbed. If any active nests are found, work must cease in that area until the ornithologist certifies that no active nests are present.

Mitigation of habitat loss may be achieved by the provision of nest boxes and other suitable features in the fabric of houses to be constructed on the site. This, associated with appropriate landscape and garden plantings, will reduce the impact on birds.

5.11 Hedgehog

Site personnel should be mindful of the possibility of the presence of Hedgehogs and ensure that any animals found come to no harm, in particular, during the winter when they may be hibernating in dense vegetation including in banks and hedge-bottoms. Animals should be left alone or, if in imminent danger from site operations, should be carefully removed to safety beyond the working area. In order to minimize potential killing or disturbance to animals during the removal of rank vegetation and other potential Hedgehog refuges, a visual "finger-tip" search of the habitat should be undertaken prior to and during clearance work and initial disturbance be carried out with hand-tools only, prior to the use of mechanical plant.

The construction of habitat piles as recommended for reptiles and amphibians will also be of benefit to Hedgehogs.

5.12 Invasive Non-Native Species (INNS)

With the exception of a small bush of Cherry Laurel recorded about 25m north of the application site on the roadside at TN17 and a single possible Hollyberry Cotoneaster on the woodland edge at TN5, no Invasive Non-Native Species were recorded during the present survey. Neither of these species is of major significance at this site at present but it should be noted that bird-sown seedlings may be present within the application site and any plants encountered during construction works should be removed for off-site disposal.

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Although no Japanese Knotweed stands or plants were seen during the survey, it is possible that small plants might have been overlooked. Site staff should be aware of its possible presence and be vigilant in its detection. Construction works must ensure that knotweed stands are not disturbed in a way that would cause the spread or export of propagules from the site and site operations must comply with approved containment practices. Japanese Knotweed must be treated using approved methods prior to the commencement of any work which might cause its disturbance or spread in compliance with the *Knotweed Code of Practice* (Environment Agency, 2013).

5.13 Construction of Habitat Piles & Hibernacula

Arisings from scrub cutting should, where possible, be utilized to form habitat piles. Woody and herbaceous arisings from site clearance should be made into piles, ideally in undisturbed sites, where they will receive sun for at least some part of the day. Habitat piles are particularly attractive to reptiles and amphibians seeking refuge and hibernation sites but also provide cover for Hedgehogs and many other species.

In addition, stone and rubble should be utilized to provide winter hibernacula.

Details can be found at section 9, page 45, of the *Reptile Habitat Management Handbook* (Edgar *et al*, 2010) downloadable from

<http://www.arc-trust.org/Resources/Arc%20Trust/Documents/reptile-habitat-management-handbook-ffull.pdf>

5.14 New plantings

Landscape plantings should seek to provide habitat connectivity linking habitats surrounding the site. Where possible, trees and dense hedges should be retained, maintained or planted around the site margins and between new properties to connect existing woodlands to the south and along the edge of the A470 to existing habitats to the west and gardens to the north and north-east.

All new plantings should be of species appropriate to preserve the character of the local landscape. Where native species are planted, in order to ensure that they are compatible with the local gene pool of the area, they should be of local provenance as outlined in Forest Practice Note No. 8, *Using Local Seed Sources for Planting Native Trees and Shrubs* (Forestry Commission, 1999).

In order to provide faunal feeding opportunities, plantings should include berry and seed-bearing trees and shrubs such as Hawthorn, Hazel, Crab Apple, Alder Buckthorn, Guelder Rose, Rowan and Elder. Native species of trees and shrubs (including non berry-bearing species) generally have higher invertebrate productivity than alien species, thus resulting in a richer environment for birds and other fauna.

Existing vegetation and new plantings should not be over-managed and species such as ivy, bramble, willow and gorse should be allowed to grow, as these also provide good food sources and cover for nesting birds and other fauna.

5.15 Timing of Works

In order to comply with current legislation and best practice, all works should be carried out bearing due regard to the requirements of all flora and fauna, during the appropriate times of year (see appendix 7).

A suitable timetable for works should be drawn-up to comply with all ecological constraints and requirements.

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5.16 Implementation and Supervision

Careful planning and supervision of site personnel should seek to ensure that disturbance to existing habitats and species is kept to an absolute minimum.

Where required, there should be input from the site ecologist at all stages of the project. Where appropriate, the above recommendations should be translated into clauses in works contracts and be specified in method statements.

The ecologist should attend site at the commencement of works to familiarize site personnel with ecological constraints. Site personnel should be made familiar with the ecological requirements of the site at induction courses and tool-box talks.

If necessary, the site ecologist should monitor progress as construction work proceeds in order to ensure that ecological requirements are being satisfactorily implemented.

5.17 Future Site Maintenance

Following the completion of the construction phase, future maintenance of the site should bear due regard to the well-being of all habitats, flora and fauna and only employ best-practice.

All maintenance works must be undertaken at times appropriate to avoid unnecessary disturbance, for example, to avoid the bird nesting season and to minimize disturbance to hibernating animals.

Lopping of trees and cutting of vegetation should not be over-aggressive and it should be borne in mind that species such as Ivy, Gorse, willow and Bramble are very important habitats for many species.

The frequent cutting of grass verges without removing the arisings invariably results in their decline in ecological value due to soil enrichment causing a considerable reduction in species-diversity. Arisings from grass cutting should therefore always be removed.

Management practices and prescriptions should be conveyed to the maintenance staff or contractors who carry out such routine maintenance, on every occasion that work is undertaken.

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APPENDIX 1

INTERNATIONAL, NATIONAL AND LOCAL STATUTORY AND POLICY FRAMEWORK

updated from text compiled by David Clements

1. Nature conservation in the UK is affected by a complex framework of legislation and policy at the international, national, regional and local levels. This section of the strategy summarises current legislation and policy insofar as it affects the study area, and gives a brief outline of the statutory obligations and responsibilities within which the strategy must function.
2. The summary below deals only with legislation and statutory policy matters which are directly relevant to the study area. Other legislation and policy documents which have indirect relevance, or which could become relevant in the future, should be consulted where relevant.
- 3 **International Obligations**
 - 3.1 There is increasing awareness and concern at the need to protect natural habitats and their biodiversity at both the global and the European scale. This has resulted in a number of important international conventions, directives and agreements in the period since about 1970, to which the UK has either become a signatory or has incorporated into national law. The most relevant of these are as follows:

EC Council Directive on the Conservation of Wild Birds, 1979 (The 'Birds Directive')

3.2 The Birds Directive (No. 79/409/EEC) applies to wild birds, their eggs, nests and habitats, and provides for the protection, management and control of all species of birds naturally occurring within member states. It requires the UK to take measures to ensure the preservation of sufficient diversity of habitats to maintain populations of all such birds at ecologically and scientifically supportable levels.

3.3 The habitats of certain rare and vulnerable birds (listed in Annex 1 of the Directive), and regular migratory species, are to be conserved by special measures including the identification, designation and protection of key areas of habitat. These designated areas are known as 'Special Protection Areas' or SPAs, and in the UK, are also required to be designated as SSSIs under domestic legislation.

EC Council Directive on the Conservation of Natural Habitats of Wild Flora and Fauna, 1992 (The 'Habitats Directive') updated 2010.

3.4 The Habitats Directive (No. 92/43/EEC) requires the UK to maintain and/or restore naturally occurring habitats, especially those which are deemed to be vulnerable and declining in Europe. It also requires the protection of many species of plants and animals which are similarly threatened and declining throughout their European range, therefore giving effect to both site and species protection objectives.

3.5 The Directive requires the UK to designate sites, on land and at sea, which will form part of a network of special sites within a broader, sensitively managed landscape. The designated sites, referred to as 'Special Areas of Conservation' (or SACs), together with the SPAs designated under the Birds Directive, form part of the EC 'Natura 2000' network of sites which are deemed to be of 'Community Interest', ie of significance in the pan-European context.

3.6 SACs may be selected for their importance as natural habitat types and/or as habitats for the rare and vulnerable species listed in Annexes I and II of the Directive. The UK Government was required to present a list of candidate SACs by June 1998, and has since gone through the process of refining and confirming the listed sites.

3.7 In the UK, the requirements of the Habitats Directive are implemented through the *Conservation (Natural Habitats etc) Regulations 1994*. All SACs are required to be notified as SSSIs under domestic legislation.

Convention on Biological Diversity, 1992 (The 'Rio Convention')

3.8 The Rio Convention on Biodiversity was one of several products arising from the *1st Earth Summit: a UN Conference on the Environment and Development (UNCED)* held in Rio de Janeiro in 1992.

3.9 The Rio Convention sets out an agreement between over 120 countries to investigate how the world's biodiversity - the entire range and variety of life on earth or any part of it - can best be conserved. It covers issues such as the sustainable use of environmental resources, the rehabilitation of degraded ecosystems and recovery of threatened species. Each of the participating nations is required to produce a Biodiversity Action Plan (BAP) setting out its own national targets and initiatives for meeting the objectives of the Convention.

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- 3.10 Other products from the Earth Summit included *Agenda 21* - a comprehensive programme of action needed throughout the world to achieve a more sustainable pattern of development into the next century and agreements on matters such as global climate change and the sustainable development of forestry. Within this context, local planning authorities in the UK are required to develop and adopt their own sustainable development strategies at the local level – 'Local Agenda 21' (LA21).
- 3.11 Local Agenda 21 is concerned primarily with wider actions to create and maintain the local quality of life and environment, providing an opportunity for communities to think through the priorities for their local area and to establish action plans to influence the direction of change. The development of nature conservation strategies and locally-applicable biodiversity action plans (LBAPs) form important elements of the LA21 process in so far as it affects the sustainable use of nature conservation and earth science resources.

EC Directive on the Assessment of the Effects of Certain Public and Private Projects on the Environment, 1997 (The 'EA Directive')

- 3.12 The first EC Directive on Environmental Assessment (No. 85/337/EEC) was published in 1985 and was implemented in the UK primarily through the *Town & Country Planning (Assessment of Environmental Effects) Regulations 1988* and its various amendments. This required the UK to implement a formal framework for assessing the impacts of certain types of development on the environment, particularly where these are of a large or potentially damaging nature, before a decision is taken on whether or not they should proceed. This includes an assessment of the impact of the development on nature conservation and ecology.
- 3.13 The Directive was revised in 1997 (No. 97/11/EC) in order to clarify certain ambiguities in the original directive, whilst extending the range of projects that are now to be subject to formal Environmental Assessment, and this has been transferred into UK legislation via the *Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999* which came into force on the 14 March 1999.

The Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats)

- 3.14 The Berne Convention is designed to protect important populations of listed species and their habitats. Appendix I floral species which are required to be strictly protected against picking, collecting, possession, sale, etc. Appendix II places particular emphasis on migratory species and their breeding and resting sites. Listed species are required to be strictly protected against a range of activities including deliberate killing, disturbance, taking of eggs, trading, etc. Appendix III protects populations of animals against exploitation and requires their management to keep them out of danger.

The Bonn Convention on the Conservation of Migratory Species of Wild Animals

- 3.15 Appendix 1 of the Bonn Convention lists species considered to be in danger of extinction which require strict protection from any threat. Appendix II lists species generally of conservation concern which will benefit from international co-operation. Signatories are encouraged to draw-up agreements to restore / maintain species' conservation status by appropriate measures.

4 National Legislation and Policy Framework

- 4.1 The UK now possesses a complex framework of domestic legislation and Government guidance concerned with nature conservation and the protection of both habitats and species. The legislative approach has generally stemmed in the past from the protection of individual sites and species, but has more recently broadened into concern for the wider environment and towards integrated policies for sustainability and the conservation of all species.
- 4.2 The key strands of national legislation and policy are outlined below:

Wildlife and Countryside Act 1981 (amended by the Wildlife and Countryside (Amendment) Act 1985 and others)

- 4.3 This Act, which has been greatly amended by subsequent legislation, remains the central pillar of statutory nature conservation in the UK. It provides the statutory basis for the legal protection of a wide range of specified plants and animals, and sets out the current principles for the designation,

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administration and protection of National Nature Reserves (NNRs), Sites of Special Scientific Interest (SSSIs) and Local Nature Reserves (LNRs).

- 4.4 The provisions of the Wildlife & Countryside Act (or 'WCA') with respect to SSSIs have recently been revised and enhanced by the Countryside & Rights of Way Act 2000 (see below).

The Conservation (Natural Habitats etc) Regulations 1994 (The 'Habitats Regulations')

- 4.5 This Statutory Instrument formally transposes the requirements of the EC Habitats Directive into British Law.

Biodiversity - The UK Action Plan; Command 2428, 1994 (The 'UK BAP')

- 4.6 The Rio Convention (see above) recognised that action must be taken to halt the world-wide loss of animal and plant species, and their potential genetic resources. It was agreed that national plans would be drawn up by each of the participating nations.

- 4.7 The UK BAP sets out the following objectives:

'To conserve and where practical enhance:

- i) *the overall populations and natural ranges of native species and the quality and range of wildlife habitats and ecosystems;*
- ii) *internationally important and threatened species, habitats and ecosystems;*
- iii) *species, habitats and natural and managed ecosystems that are characteristic of local areas;*
- iv) *the biodiversity of natural and semi-natural habitats where this has been diminished over recent past decades.*

To increase public awareness of, and involvement in, conserving biodiversity;

To contribute to the conservation of biodiversity on a European and global scale.'

- 4.8 The UK Steering Group was subsequently set up to develop costed targets for key species and habitats, and to set out recommendations for achieving the objectives of the UK BAP. The findings and recommendations of this group are set out in *Biodiversity: The UK Steering Group Report* (UKSG), published in 1995.

- 4.9 The UK Steering Group, and its successor body the UK Biodiversity Group, have published costed action plans at the UK level for about 40 Priority Habitats and 400 Priority Species, together with shorter and less detailed statements for a further 100 or so Priority Species (UKSG 1995; UKBG 1998-99).

The Countryside and Rights of Way Act, 2000 (the 'CROW Act'), the Natural Environment and Rural Communities Act 2006 (the 'NERC Act') and the Environment (Wales) Act 2016

- 4.10 These Acts require all public bodies to have statutory regard to the purpose and objectives of the UK Biodiversity Action Plan and to encourage others likewise. The National Assembly for Wales, in association with CCW, published a list of habitats and species under section 74 of the CROW Act reviewed under section 40 of the NERC Act resulting in the section 42 list of *Species and Habitats of Principal Importance for Conservation of Biological Diversity*. In Wales, the Welsh Government enacted the Environment (Wales) Act in 2016 which replaces and reinforces the biodiversity aspects of the NERC Act which continues to apply in England. The list of *Species and Habitats of Principal Importance for Conservation of Biological Diversity* under section 7 of the Environment (Wales) Act replaces the NERC section 42 list in Wales. All public bodies are required to take steps, and to promote the taking of steps by others, to further the conservation of these listed habitats and species.

- 4.11 These Acts also reinforce the protection and administration of SSSIs, giving additional powers to the agencies and local authorities. Amongst the measures are:

- a duty on public bodies to secure positive management on land which they control or occupy;
- rights to refuse consent for damaging activities not previously subject to regulation;
- licence or rights-holders to be treated the same as owners/occupiers;
- agency-flexible compulsory purchase powers;
- restrictions on third party users;
- amendments to permitted developments rules;
- improved enforcement, etc.

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- 4.12 Welsh local planning authorities are required to regard habitats and species listed under section 7 Environment (Wales) Act as material considerations within the planning and development process when assessing applications for planning consent.

The Protection of Badgers Act 1992

- 4.13 This Act brings together a series of Acts which were specifically designed to protect Badgers from persecution and other disturbance. It generally protects individual animals as well as their places of shelter (setts) and is generally interpreted to mean that it is an offence to carry out any hand works within 10m, and any mechanical works within 30m (40m if pile driving or other vibration is involved) of the closest sett entrance. Licensing is required from DEFRA or Natural Resources Wales for works within these exclusion zones and then only during the months of July to November inclusive. In general, licensing for main-sett closure is only granted on welfare grounds and not for commercial reasons.

5 Government Planning Guidance

- 5.1 Government guidance for planning authorities is set out in a series of planning guidance documents. These are intended to ensure consistency between local authorities in interpreting the law and in defining their responsibilities and powers regarding matters such as development control.
- 5.2 Wales has its own series of planning guidance documents. These take the form of a general policy statement document (*Planning Guidance (Wales): Planning Policy 1999*) which is supplemented by a series of *Technical Advice Notes* (TANs) which amplify the guidance with respect to key areas of detail. Many of the current documents make reference to nature conservation issues. The main strands are as follows:

Planning Guidance (Wales): Planning Policy (First Revision) 1999 ('PG(W):PP')

- 5.3 This sets out the broad principles for the operation of the planning system in Wales. The document contains general commitments to sustainable development, the protection of biodiversity and protection of the environment as a whole.
- 5.4 PG(W):PP indicates that local authorities should determine planning applications strictly in accordance with the policies contained in the current development plan, and should only do otherwise when there are significant material considerations which make this desirable. Development plans are required to have reasonably detailed policies with respect to nature conservation, and the document goes on to give guidance as to what these should cover.
- 5.5 Para 5.3.13 notes that '*both statutorily designated sites and other [ie locally] designated sites are important for the conservation of natural heritage, as are some non-designated areas and features which provide wildlife corridors*'. Development plans should '*ensure that relevant international, national and local conservation interests are properly provided for*' and that they should '*also be concerned with other land of conservation value, including wildlife sites in urban areas and the possible provision of new habitats*' (para 5.3.15).
- 5.6 The importance of protecting locally designated sites is acknowledged in the guidance, provided these are of 'substantive nature conservation value', have been assessed against formal criteria and are not unduly or unreasonably restrictive of development. Para 5.3.20 also states that the presence of a protected species is a material consideration when considering planning applications, and notes that applicants must conform with any statutory species protection provisions affecting the site concerned.

Planning Guidance (Wales): Technical Advice Note (Wales) 5: Nature Conservation and Planning 2009 ('TAN 5')

- 5.7 TAN 5 amplifies the broad provisions of PG(W):PP with respect to nature conservation and is the main source of current planning guidance for this subject in Wales. In summary, the guidance:
- sets out the Government's objectives for nature conservation and the framework for safeguarding our natural heritage under domestic and international law;
 - describes the key role of local authorities and CCW;
 - emphasises the importance of both designated sites and non-designated habitats for nature conservation;
 - advises on the treatment of nature conservation issues in development plans;
 - states development control criteria, particularly for SSSIs and sites with additional national and international designations;

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- sets out the implications and implementation of the EC Habitats and EC Birds Directives.

6 Other Wildlife Designations

6.1 The Countryside Council for Wales and several non-governmental bodies, such as the RSPB and researchers specialising in particular floral or faunal groups, have produced lists of species which have suffered serious population declines or contractions in range. These designations are outlined below.

6.2 Countryside Council for Wales List of Globally Threatened Plants

Category A lists 16 species which are all more or less endemic to Europe, occur in fewer than 50% of European countries and have shown serious declines leading to extinctions at national level. Category B lists a further 6 species, all showing serious declines leading to national extinctions, but present in more than 50% of European countries. Category C lists a further 16 species which have suffered similar declines but which are not endemic to Europe.

6.3 RSPB Birds of Conservation Concern

Birds which have suffered serious population or range declines over the last 25 years have been highlighted by the publication of *Birds of conservation concern* (RSPB, 1995). The *Red List* broadly includes those species which have suffered at least a 50% decline in the last 25 years, and the *Amber List* those species which have suffered at least a 25% decline in the same period.

6.4 BTO Breeding Birds of concern in the Wider Countryside

This list (Crick *et al*, 1997) provides a further listing of species showing evidence of decline: the degree of urgency of threat to these populations is indicated by High or Medium Alert status.

6.5 Red Data Birds

The criteria used for the selection of species for inclusion onto the list of Red Data birds are given in Batten *et al* (1990, pp.3-7). In summary, consideration is given to

1. international significance of the British population,
2. scarcity as a British breeder,
3. declining breeding numbers,
4. restricted distribution in vulnerable sites or habitats,
5. species of special concern.

6.6 Candidate Red Data Birds

The list of Candidate Red Data birds includes those species which Batten *et al* (1990) considered may meet the criteria for inclusion onto the Red Data list within the next 25 years (from 1990).

6.7 Local Invertebrate Species

Localised invertebrate species within Britain are defined as being recorded from 101 - 300 of the 10km squares in Britain since 1980. The definition covers both species which are patchily distributed throughout Britain and species that are confined to particular areas but generally distributed within these (Waring, 1993). Designations such as **notable a** and **notable b** are used to distinguish species of high and medium conservation concern.

6.7 Plant species of Local Significance

These are listed in the Glamorgan Rare Plant Register which places the county's rare and scarce plants into categories of international, national and county significance.

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APPENDIX 2**Target Notes**

The locations of the following Target Notes recorded during the field survey are shown on figure 2.

Richard Pryce assessed the site between 11:00hrs and 14:00hrs on 8th August 2019.

Weather: sunny intervals, light NW wind to calm, clear 20°C, 6/8 cloud.

Target notes have been recorded using Biorecs biological recording software which facilitates these records being incorporated into databases administered by specialist bodies including nationally to the Biological Records Centre at the Centre for Ecology and Hydrology, Wallingford, the Distributional Database maintained by the Botanical Society of Britain & Ireland (BSBI) and to local databases such as that at the South-East Wales Biodiversity Records Centre and the database maintained by the County Plant Recorder of the BSBI. Such records advance the knowledge and understanding of the distribution and frequency of plants, animals and habitats and enable a more informed approach to be made to future management and conservation of the natural and semi-natural environment and potentially assist with the assessment of the impact that future development and land-use changes may have on habitats and wildlife. These records will be submitted to the national and local databases in due course.

Key to Species Status mnemonics**Plants and some faunal groups**

d	dominant
a	abundant
b	locally abundant
f	frequent
g	locally frequent
i	introduced
l	faunal sign (eg otter spraint)
o	occasional
r	rare
p	present (no frequency noted)
s	self sown alien species
t	garden throw-out
\$	cf (determination uncertain at this season or specialist determination required)

Fauna

The actual number of individuals is noted for birds and some other faunal groups.

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Colliers Row TN01

Dwarf Elder locally abundant on west side of track. Pedunculate Oak seedling noted in tall herb vegetation. Two Herring Gull flying over low.

Grid ref. : **32/0385- 0622-** Record date : **08/08/2019**

Habitat : **C31 - Tall herb or fern:Ruderal/ephemeral(not Pteridium)**

Observer : **Richard D. Pryce**

Vice county : Glamorgan Altitude : 210

Group : 2 - Plants : RP6

Scientific Name	Vernacular Name	Species Status
<i>Agrostis stolonifera</i>	Creeping Bent	b
<i>Anthriscus sylvestris</i>	Cow Parsley	r
<i>Arrhenatherum elatius</i>	False Oat-Grass	g
<i>Calystegia sepium sens.lat.</i>	Hedge Bindweed	g
<i>Calystegia sepium subsp.sepium</i>	Hedge Bindweed	g
<i>Calystegia sepium</i>	Hedge Bindweed	g
<i>Chamerion angustifolium</i>	Rosebay Willowherb	g
<i>Epilobium hirsutum</i>	Great Willowherb	b
<i>Epilobium obscurum</i>	Short-fruited Willowherb	o
<i>Galium aparine</i>	Cleavers	p
<i>Lapsana communis</i>	Nipplewort	o
<i>Poa annua</i>	Annual Meadow-grass	g
<i>Poa trivialis</i>	Rough Meadow-grass	g
<i>Quercus robur</i>	Pedunculate Oak	K
<i>Rubus fruticosus agg.</i>	Bramble	g
<i>Sambucus ebulus</i>	Dwarf Elder	g
<i>Sonchus asper</i>	Prickly Sow-thistle	r

Group : 37 - Birds

Scientific Name	Vernacular Name	Species Status
<i>Larus argentatus</i>	Herring Gull	2

Colliers Row TN02

Planted trees and bushes, scrubby, shaded, dense, inaccessible, fenced. Species comprise locally abundant dogwood with occasional Hawthorn, Sycamore, Hazel, Snowberry and rose. Nuthatch calling nearby.

Grid ref. : **32/0385- 0619-** Record date : **08/08/2019**

Habitat : **A112 - Plantation broadleaved woodland**

Observer : **Richard D. Pryce**

Vice county : Glamorgan Altitude : 210

Group : 2 - Plants : RP6

Scientific Name	Vernacular Name	Species Status
<i>Acer pseudoplatanus</i>	Sycamore	i
<i>Anthriscus sylvestris</i>	Cow Parsley	r
<i>Corylus avellana</i>	Hazel	i
<i>Crataegus monogyna</i>	Hawthorn	i
<i>Dactylis glomerata</i>	Cock's-foot	r
<i>Fraxinus excelsior</i>	Ash	p
<i>Rosa sp.</i>	a Rose	i
<i>Symphoricarpos albus</i>	Snowberry	i

Group : 37 - Birds

Scientific Name	Vernacular Name	Species Status
<i>Sitta europaea</i>	Wood Nuthatch	1

Colliers Row TN03

Eastern continuation of planted woodland TN02: planted trees and shrubs dense, fenced and inaccessible.

Planted species include locally abundant Dogwood, locally frequent Ash (with some die-back disease), occasional Hazel and Lawson's Cypress. Ground flora recorded from fenced edge only. Green Woodpecker. Creeping Soft-grass infected with rust.

Grid ref. : **32/0387- 0620-** Record date : **08/08/2019**

Habitat : **A112 - Plantation broadleaved woodland**

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Observer : **Richard D. Pryce**

Vice county : Glamorgan Altitude : 210

Group : 2 - Plants : RP6

Scientific Name	Vernacular Name	Species Status
<i>Agrostis stolonifera</i>	Creeping Bent	g
<i>Arrhenatherum elatius</i>	False Oat-Grass	b
<i>Centaurea nigra</i>	Common Knapweed	o
<i>Chamaecyparis lawsoniana</i>	Lawson's Cypress	i
<i>Chamerion angustifolium</i>	Rosebay Willowherb	r
<i>Cirsium arvense</i>	Creeping Thistle	r
<i>Corylus avellana</i>	Hazel	i
<i>Crataegus monogyna</i>	Hawthorn	o
<i>Dactylis glomerata</i>	Cock's-foot	g
<i>Dryopteris filix-mas</i> agg.	Common Male Fern	r
<i>Festuca rubra</i>	Red Fescue	o
<i>Fraxinus excelsior</i>	Ash	i
<i>Geum urbanum</i>	Wood Avens	p
<i>Hedera helix</i> agg.	Ivy	g
<i>Holcus mollis</i>	Creeping Soft-grass	g
<i>Hypericum maculatum</i>	Imperforate St John's-wort	o
<i>Lapsana communis</i>	Nipplewort	o
<i>Rubus fruticosus</i> agg.	Bramble	g
<i>Torilis japonica</i>	Upright Hedge-parsley	o

Group : 37 - Birds

Scientific Name	Vernacular Name	Species Status
<i>Picus viridis</i>	Green Woodpecker	1

Group : 16 - Butterflies

Scientific Name	Vernacular Name	Species Status
<i>Pararge aegeria</i>	Speckled Wood	1

Colliers Row TN04

Horse-grazed grassland on colliery spoil inside trotting track. Bare spoil up to c.15%.

Grid ref. : **32/0389- 0619-** Record date : **08/08/2019**

Habitat : **B2 - Neutral grassland**

Observer : **Richard D. Pryce**

Vice county : Glamorgan Altitude : 210

Group : 2 - Plants : RP6

Scientific Name	Vernacular Name	Species Status
<i>Achillea millefolium</i>	Yarrow	g
<i>Agrostis capillaris</i>	Common Bent	a
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	o
<i>Bellis perennis</i>	Daisy	r
<i>Bromus hordeaceus</i> subsp. <i>hordeaceus</i>	Common Soft-brome	r
<i>Bromus hordeaceus</i>	Soft-brome	r
<i>Centaurea nigra</i>	Common Knapweed	r
<i>Centaureum erythraea</i>	Common Centaury	r
<i>Crepis capillaris</i>	Smooth Hawk's-beard	r
<i>Cynosurus cristatus</i>	Crested Dog's-tail	f
<i>Festuca rubra</i>	Red Fescue	f
<i>Hypericum perforatum</i>	Perforate St John's-wort	r
<i>Lolium perenne</i>	Perennial Rye-grass	a
<i>Lotus pedunculatus</i>	Greater Bird's-foot-trefoil	o
<i>Matricaria discoidea</i>	Pineappleweed	r
<i>Odontites vernus</i>	Red Bartsia	r
<i>Plantago lanceolata</i>	Ribwort Plantain	a
<i>Plantago major</i>	Greater Plantain	o
<i>Polygonum polychnemiforme</i>		r
<i>Rumex obtusifolius</i>	Broad-leaved Dock	r
<i>Scorzoneroideis autumnalis</i> var. <i>coronopifolia</i>	Autumn Hawkbit	a
<i>Scorzoneroideis autumnalis</i>	Autumn Hawkbit	a
<i>Senecio jacobaea</i>	Common Ragwort	r
<i>Taraxacum</i> agg.	Dandelion	o
<i>Trifolium pratense</i>	Red Clover	o
<i>Vulpia bromoides</i>	Squirreltail Fescue	g

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Group : 16 - Butterflies

Scientific Name*Maniola jurtina***Vernacular Name**

Meadow Brown

Species Status

1

Colliers Row TN05

Planted woodland, dense, unthinned, etiolated. Dense edge of locally abundant Blackthorn and Bramble, locally frequent rose, abundant Ash (most with die-back disease), occasional Hazel, birch and Grey Alder. Herring Gull flying over, at about 50 ft. Other species listed are from woodland edge.

Grid ref. : **32/0392- 0621-** Record date : **08/08/2019**Habitat : **A112 - Plantation broadleaved woodland**Observer : **Richard D. Pryce**

Vice county : Glamorgan

Altitude : 210

Group : 2 - Plants : RP6

Scientific Name*Achillea millefolium**Alnus incana**Betula* sp.*Centaurea nigra**Corylus avellana**Cotoneaster bullatus**Dactylis glomerata**Festuca rubra* agg.*Fraxinus excelsior**Holcus lanatus**Phleum pratense* sens. lat.*Phleum pratense* subsp. *pratense**Phleum pratense**Prunus spinosa**Ranunculus acris**Rosa* sp.*Rubus fruticosus* agg.

Group : 37 - Birds

Scientific Name*Larus argentatus***Vernacular Name**

Yarrow

Grey Alder

a birch

Common Knapweed

Hazel

Hollyberry Cotoneaster

Cock's-foot

Red Fescue

Ash

Yorkshire-fog

Timothy

Timothy

Blackthorn

Meadow Buttercup

a Rose

Bramble

Species Status

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Species Status

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Colliers Row TN06

Continuation of horse-grazed grassland on colliery spoil at TN04 but in corner outside and north of trotting track. A single robust rose bush growing surrounded by grassland near eastern side. Bare spoil 5% - 20%, horse-poached in part. Possible reptile potential around edges but probably not attractive to amphibians.

Grid ref. : **32/0390- 0622-** Record date : **08/08/2019**Habitat : **B2 - Neutral grassland**Observer : **Richard D. Pryce**

Vice county : Glamorgan

Altitude : 210

Group : 2 - Plants : RP6

Scientific Name*Agrostis capillaris**Anthoxanthum odoratum**Bellis perennis**Centaurea nigra**Centaureum erythraea**Cerastium fontanum**Cynosurus cristatus**Dactylis glomerata**Festuca rubra**Juncus tenuis**Lolium perenne**Lotus corniculatus**Matricaria discoidea**Plantago lanceolata**Plantago major**Rosa* sp.**Vernacular Name**

Common Bent

Sweet Vernal-grass

Daisy

Common Knapweed

Common Centaury

Common Mouse-ear

Crested Dog's-tail

Cock's-foot

Red Fescue

Slender Rush

Perennial Rye-grass

Common Bird's-foot-trefoil

Pineappleweed

Ribwort Plantain

Greater Plantain

a Rose

Species Status

a

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<i>Scorzoneroidea autumnalis</i> var. <i>coronopifolia</i>	Autumn Hawkbit	a
<i>Scorzoneroidea autumnalis</i>	Autumn Hawkbit	a
<i>Taraxacum</i> agg.	Dandelion	o
<i>Vulpia bromoides</i>	Squirreltail Fescue	g
Group : 16 - Butterflies		
Scientific Name	Vernacular Name	Species Status
<i>Polyommatus icarus</i>	Common Blue	1

Colliers Row TN07

Planted woodland, dense, shaded, etiolated c.50ft tall, including Alder, Ash, Rowan and birch. Dense edge of Bramble and planted rose with some Common Knapweed and Yarrow.

Grid ref. : **32/0389- 0623-** Record date : **08/08/2019**

Habitat : **A112 - Plantation broadleaved woodland**

Observer : **Richard D. Pryce**

Vice county : Glamorgan Altitude : 210

Group : 2 - Plants : RP6

Scientific Name	Vernacular Name	Species Status
<i>Achillea millefolium</i>	Yarrow	r
<i>Alnus glutinosa</i>	Alder	i
<i>Betula</i> sp.	a birch	i
<i>Centaurea nigra</i>	Common Knapweed	b
<i>Fraxinus excelsior</i>	Ash	i
<i>Rosa</i> sp.	a Rose	i
<i>Rubus fruticosus</i> agg.	Bramble	b
<i>Sorbus aucuparia</i>	Rowan	i

Colliers Row TN08

Planted woodland on colliery spoil, tall, etiolated, unthinned trees, difficult to walk through due to density of planting. Planted species include Hazel, Pedunculate Oak, Hawthorn, Sycamore, Grey Alder and birch. Very shady and virtually no ground flora just rare Dandelion, Common Nettle, Broad-leaved Willowherb and Remote Sedge, with locally frequent Bramble. Regeneration of Hazel, Grey Alder, Ash and Sycamore. Grass cuttings and other fly-tipped rubbish dumped at woodland edge.

Grid ref. : **32/0393- 0623-** Record date : **08/08/2019**

Habitat : **A112 - Plantation broadleaved woodland**

Observer : **Richard D. Pryce**

Vice county : Glamorgan Altitude : 210

Group : 2 - Plants : RP6

Scientific Name	Vernacular Name	Species Status
<i>Acer pseudoplatanus</i>	Sycamore	i
<i>Alnus incana</i>	Grey Alder	i
<i>Betula</i> sp.	a birch	i
<i>Carex remota</i>	Remote Sedge	r
<i>Corylus avellana</i>	Hazel	i
<i>Crataegus monogyna</i>	Hawthorn	i
<i>Epilobium montanum</i>	Broad-leaved Willowherb	r
<i>Quercus robur</i>	Pedunculate Oak	i
<i>Rubus fruticosus</i> agg.	Bramble	g
<i>Taraxacum</i> agg.	Dandelion	r
<i>Urtica dioica</i>	Common Nettle	r

Colliers Row TN09

Rather better grown woodland than TN08, TN07 or TN05, but still comprises of etiolated, unthinned trees, planted on colliery spoil. More diverse and better developed ground flora hereabouts: Wood Avens, Common Nettle, Cleavers, Bramble and abundant mosses. Regenerating Pedunculate Oak, Grey Alder, Ash, Hawthorn and Hazel. Speckled Wood butterfly and wasp noted.

Grid ref. : **32/0390- 0626-** Record date : **08/08/2019**

Habitat : **A112 - Plantation broadleaved woodland**

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Observer : **Richard D. Pryce**

Vice county : Glamorgan Altitude : 210

Group : 2 - Plants : RP6

Scientific Name	Vernacular Name	Species Status
<i>Betula sp.</i>	a birch	i
<i>Corylus avellana</i>	Hazel	i
<i>Fraxinus excelsior</i>	Ash	i
<i>Galium aparine</i>	Cleavers	r
<i>Geum urbanum</i>	Wood Avens	b
<i>Holcus mollis</i>	Creeping Soft-grass	r
<i>Quercus robur</i>	Pedunculate Oak	i
<i>Rosa canina agg.</i>	Dog-rose	i
<i>Rubus fruticosus agg.</i>	Bramble	b
<i>Sorbus aucuparia</i>	Rowan	i
<i>Urtica dioica</i>	Common Nettle	g

Group : 16 - Butterflies

Scientific Name	Vernacular Name	Species Status
<i>Pararge aegeria</i>	Speckled Wood	1

Group : 37 - Birds

Scientific Name	Vernacular Name	Species Status
<i>Parus major</i>	Great Tit	2

Colliers Row TN10

Ash-dominated area of etiolated, planted woodland on colliery spoil. More light getting to woodland floor than elsewhere in wood due to Ash die-back disease, resulting in relatively dense sub-shrub layer of Bramble and herb layer of Creeping Soft-grass. Occasional regeneration of planted Grey Alder, Hawthorn and Ash.

Grid ref. : **32/0389- 0628-** Record date : **08/08/2019**

Habitat : **A112 - Plantation broadleaved woodland**

Observer : **Richard D. Pryce**

Vice county : Glamorgan Altitude : 210

Group : 2 - Plants : RP6

Scientific Name	Vernacular Name	Species Status
<i>Agrostis capillaris</i>	Common Bent	g
<i>Alnus incana</i>	Grey Alder	o
<i>Arrhenatherum elatius</i>	False Oat-Grass	o
<i>Crataegus monogyna</i>	Hawthorn	o
<i>Dactylis glomerata</i>	Cock's-foot	r
<i>Epilobium obscurum</i>	Short-fruited Willowherb	r
<i>Fraxinus excelsior</i>	Ash	i
<i>Geranium robertianum</i>	Herb-Robert	o
<i>Geum urbanum</i>	Wood Avens	o
<i>Holcus mollis</i>	Creeping Soft-grass	b
<i>Lapsana communis</i>	Nipplewort	o
<i>Quercus robur</i>	Pedunculate Oak	i
<i>Rosa canina agg.</i>	Dog-rose	i
<i>Rubus fruticosus agg.</i>	Bramble	a
<i>Rumex sanguineus</i>	Wood Dock	r
<i>Taraxacum agg.</i>	Dandelion	o
<i>Torilis japonica</i>	Upright Hedge-parsley	r
<i>Veronica chamaedrys</i>	Germander Speedwell	o
<i>Vicia sativa</i>	Common Vetch	r

Group : 16 - Butterflies

Scientific Name	Vernacular Name	Species Status
<i>Pararge aegeria</i>	Speckled Wood	1
<i>Pieris brassicae</i>	Large White	1

Colliers Row TN11

Mature multi-stem Goat Willow on fence line adjacent to Butterfly-bush and planted Rowan, Ash and Hazel. Sparse ground flora in woodland on south west side includes Ivy, Wood Avens and Bramble. Regeneration of originally planted Grey Alder, Rowan, Ash, Hawthorn and Pedunculate Oak. Dense Bramble on slope on north-east side of fence.

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Grid ref. : **32/0391- 0628-** Record date : **08/08/2019**Habitat : **A112 - Plantation broadleaved woodland**Observer : **Richard D. Pryce**

Vice county : Glamorgan Altitude : 210

Group : 2 - Plants : RP6

Scientific Name	Vernacular Name	Species Status
<i>Alnus incana</i>	Grey Alder	p
<i>Buddleja davidii</i>	Butterfly-bush	p
<i>Corylus avellana</i>	Hazel	i
<i>Crataegus monogyna</i>	Hawthorn	p
<i>Fraxinus excelsior</i>	Ash	i
<i>Geum urbanum</i>	Wood Aven	r
<i>Hedera helix</i> agg.	Ivy	g
<i>Quercus robur</i>	Pedunculate Oak	p
<i>Rubus fruticosus</i> agg.	Bramble	g
<i>Salix caprea</i>	Goat Willow	r
<i>Sorbus aucuparia</i>	Rowan	i

Colliers Row TN12

Bramble-dominated vegetation on south side of grassy track with Butterfly-bush, Hazel, Grey Alder and Goat Willow self-sown into Bramble and tall herb vegetation on north side. Track dominated by Perennial Rye-grass with other species as listed.

Grid ref. : **32/0393- 0626-** Record date : **08/08/2019**Habitat : **B2 - Neutral grassland**Observer : **Richard D. Pryce**

Vice county : Glamorgan Altitude : 210

Group : 2 - Plants : RP6

Scientific Name	Vernacular Name	Species Status
<i>Achillea millefolium</i>	Yarrow	g
<i>Agrostis capillaris</i>	Common Bent	o
<i>Alnus incana</i>	Grey Alder	s
<i>Arrhenatherum elatius</i>	False Oat-Grass	f
<i>Buddleja davidii</i>	Butterfly-bush	g
<i>Calystegia silvatica</i>	Large Bindweed	b
<i>Centaurea nigra</i>	Common Knapweed	r
<i>Cerastium fontanum</i>	Common Mouse-ear	r
<i>Chamerion angustifolium</i>	Rosebay Willowherb	r
<i>Corylus avellana</i>	Hazel	o
<i>Dactylis glomerata</i>	Cock's-foot	o
<i>Daucus carota</i> subsp. <i>carota</i>	Wild Carrot	r
<i>Galium aparine</i>	Cleavers	g
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	r
<i>Geranium robertianum</i>	Herb-Robert	g
<i>Holcus lanatus</i>	Yorkshire-fog	g
<i>Juncus tenuis</i>	Slender Rush	o
<i>Lolium perenne</i>	Perennial Rye-grass	b
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil	r
<i>Matricaria discoidea</i>	Pineappleweed	r
<i>Odontites vernus</i>	Red Bartsia	r
<i>Poa annua</i>	Annual Meadow-grass	o
<i>Polygonum aviculare</i> agg.	Knotgrass	o
<i>Rubus fruticosus</i> agg.	Bramble	b
<i>Salix caprea</i>	Goat Willow	s
<i>Taraxacum</i> agg.	Dandelion	o
<i>Torilis japonica</i>	Upright Hedge-parsley	o
<i>Trifolium pratense</i>	Red Clover	r
<i>Veronica chamaedrys</i>	Germander Speedwell	g
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell	r

Group : 37 - Birds

Scientific Name	Vernacular Name	Species Status
<i>Carduelis carduelis</i>	European Goldfinch	2
<i>Parus caeruleus</i>	Blue Tit	2

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Group : 16 - Butterflies

Scientific Name*Vanessa cardui***Vernacular Name**

Painted Lady

Species Status

2

Colliers Row TN13

Disused path on colliery spoil, now overgrown with rank grassy areas between Bramble, Butterfly-bush etc. One plant of *Carex spicata* noted. Bramble encroaching from sides. Occasional ant hills.

Grid ref. : **32/0394- 0625-** Record date : **08/08/2019**Habitat : **B2 - Neutral grassland**Observer : **Richard D. Pryce**

Vice county : Glamorgan

Altitude : 210

Group : 2 - Plants : RP6

Scientific Name*Acer pseudoplatanus**Achillea millefolium**Agrostis capillaris**Arrhenatherum elatius**Buddleja davidii**Carex spicata**Centaurea nigra**Chamerion angustifolium**Festuca rubra**Holcus lanatus**Hypericum maculatum**Juncus tenuis**Plantago lanceolata**Rubus fruticosus* agg.*Senecio jacobaea**Torilis japonica**Ulex europaeus*

Group : 16 - Butterflies

Scientific Name*Inachis io***Vernacular Name**

Sycamore

Yarrow

Common Bent

False Oat-Grass

Butterfly-bush

Spiked Sedge

Common Knapweed

Rosebay Willowherb

Red Fescue

Yorkshire-fog

Imperforate St John's-wort

Slender Rush

Ribwort Plantain

Bramble

Common Ragwort

Upright Hedge-parsley

Gorse

Species Status

o

g

b

b

g

m

g

b

b

g

r

r

o

b

r

r

r

Vernacular Name

Peacock

Species Status

1

Colliers Row TN14

Road verge at NE end of grassy track described as TN12.

Grid ref. : **32/03937 06273** Record date : **08/08/2019**Habitat : **B2 - Neutral grassland**Observer : **Richard D. Pryce**

Vice county : Glamorgan

Altitude : 210

Group : 2 - Plants : RP6

Scientific Name*Achillea millefolium**Arrhenatherum elatius**Centaurea nigra**Dactylis glomerata**Holcus lanatus**Lolium perenne**Matricaria discoidea**Plantago major**Polygonum polycnemiforme**Rumex obtusifolius**Senecio jacobaea**Taraxacum* agg.*Tripleurospermum inodorum*

Group : 16 - Butterflies

Scientific Name*Vanessa cardui***Vernacular Name**

Yarrow

False Oat-Grass

Common Knapweed

Cock's-foot

Yorkshire-fog

Perennial Rye-grass

Pineappleweed

Greater Plantain

o

Broad-leaved Dock

Common Ragwort

Dandelion

Scentless Mayweed

Species Status

o

g

o

o

g

b

o

o

o

r

r

r

r

Vernacular Name

Painted Lady

Species Status

1

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Colliers Row TN15

Grassy clearing on colliery spoil on south west side of road surrounded by self sown Butterfly-bush bushes. About 25 plants of Blue Fleabane growing on small open shale area. Occasional Spiked Sedge (*Carex spicata*) plants, also one plant of *Alchemilla mollis* by road. Seedlings of Downy Birch and Grey Alder noted.

Grid ref. : **32/0398- 0618-** Record date : **08/08/2019**

Habitat : **B2 - Neutral grassland**

Observer : **Richard D. Pryce**

Vice county : Glamorgan Altitude : 210

Group : 2 - Plants : RP6

Scientific Name	Vernacular Name	Species Status
<i>Achillea millefolium</i>	Yarrow	r
<i>Agrimonia eupatoria</i>	Agrimony	r
<i>Agrostis capillaris</i>	Common Bent	o
<i>Agrostis stolonifera</i>	Creeping Bent	o
<i>Alchemilla mollis</i>	Garden Lady's-mantle	m
<i>Alnus incana</i>	Grey Alder	K
<i>Betula pubescens</i>	Downy Birch	o
<i>Buddleja davidii</i>	Butterfly-bush	s
<i>Carex spicata</i>	Spiked Sedge	m
<i>Centaurea nigra</i>	Common Knapweed	b
<i>Cirsium vulgare</i>	Spear Thistle	r
<i>Cynosurus cristatus</i>	Crested Dog's-tail	g
<i>Dactylis glomerata</i>	Cock's-foot	o
<i>Daucus carota subsp. carota</i>	Wild Carrot	g
<i>Erigeron acris</i>	Blue Fleabane	r
<i>Festuca rubra</i>	Red Fescue	f
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	r
<i>Holcus lanatus</i>	Yorkshire-fog	g
<i>Hypericum perforatum</i>	Perforate St John's-wort	g
<i>Hypochaeris radicata</i>	Cat's-ear	r
<i>Leontodon hispidus</i>	Rough Hawkbit	o
<i>Lotus pedunculatus</i>	Greater Bird's-foot-trefoil	o
<i>Medicago lupulina</i>	Black Medick	o
<i>Plantago lanceolata</i>	Ribwort Plantain	g
<i>Potentilla anserina</i>	Silverweed	r
<i>Potentilla reptans</i>	Creeping Cinquefoil	o
<i>Rubus fruticosus agg.</i>	Bramble	g
<i>Rumex crispus</i>	Curled Dock	o
<i>Salix cinerea subsp. oleifolia</i>	Rusty Willow	r
<i>Scorzoneroides autumnalis var. coronopifolia</i>	Autumn Hawkbit	g
<i>Scorzoneroides autumnalis</i>	Autumn Hawkbit	g
<i>Senecio jacobaea</i>	Common Ragwort	r
<i>Taraxacum agg.</i>	Dandelion	g
<i>Torilis japonica</i>	Upright Hedge-parsley	r
<i>Trifolium pratense</i>	Red Clover	r
<i>Ulex europaeus</i>	Gorse	r
<i>Veronica chamaedrys</i>	Germander Speedwell	r
<i>Vulpia bromoides</i>	Squirreltail Fescue	o

Group : 16 - Butterflies

Scientific Name	Vernacular Name	Species Status
<i>Maniola jurtina</i>	Meadow Brown	1
<i>Vanessa cardui</i>	Painted Lady	3

Colliers Row TN16

Dense Bramble thicket clothing north-east facing slope down to road. Occasional Hazel and a few Ash saplings self sown and emerging from brambles.

Grid ref. : **32/0390- 0630-** Record date : **08/08/2019**

Habitat : **A21 - Dense/continuous scrub**

Observer : **Richard D. Pryce**

Vice county : Glamorgan Altitude : 210

Group : 2 - Plants : RP6

Scientific Name	Vernacular Name	Species Status
<i>Arrhenatherum elatius</i>	False Oat-Grass	g

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<i>Calystegia silvatica</i>	Large Bindweed	g
<i>Centaurea nigra</i>	Common Knapweed	o
<i>Cirsium arvense</i>	Creeping Thistle	g
<i>Corylus avellana</i>	Hazel	K
<i>Dryopteris filix-mas</i> agg.	Common Male Fern	o
<i>Epilobium hirsutum</i>	Great Willowherb	o
<i>Equisetum arvense</i>	Field Horsetail	o
<i>Fraxinus excelsior</i>	Ash	K
<i>Galium aparine</i>	Cleavers	b
<i>Rosa canina</i> agg.	Dog-rose	r
<i>Rubus fruticosus</i> agg.	Bramble	b

Colliers Row TN17

Dog-rose, Cherry Laurel, Hazel and Snowberry growing together to form a "bush" adjacent to pavement just south of road junction. Bramble dominates on west and south sides, Rosebay Willowherb, Creeping Thistle and Great Willowherb together with Bramble on north side. Ash sapling. Two Painted Lady butterflies on Butterfly-bush beyond.

Grid ref. : **32/03903 06326** Record date : **08/08/2019**

Habitat : **A21 - Dense/continuous scrub**

Observer : **Richard D. Pryce**

Vice county : Glamorgan Altitude : 210

Group : 2 - Plants : RP6

Scientific Name	Vernacular Name	Species Status
<i>Arrhenatherum elatius</i>	False Oat-Grass	b
<i>Chamerion angustifolium</i>	Rosebay Willowherb	b
<i>Cirsium arvense</i>	Creeping Thistle	g
<i>Corylus avellana</i>	Hazel	r
<i>Epilobium hirsutum</i>	Great Willowherb	g
<i>Fraxinus excelsior</i>	Ash	K
<i>Potentilla reptans</i>	Creeping Cinquefoil	g
<i>Prunus laurocerasus</i>	Cherry Laurel	r
<i>Rosa canina</i> agg.	Dog-rose	r
<i>Rubus fruticosus</i> agg.	Bramble	b
<i>Senecio jacobaea</i>	Common Ragwort	r
<i>Symphoricarpos albus</i>	Snowberry	o
<i>Torilis japonica</i>	Upright Hedge-parsley	r
<i>Veronica chamaedrys</i>	Germander Speedwell	r

Group : 16 - Butterflies

Scientific Name	Vernacular Name	Species Status
<i>Vanessa cardui</i>	Painted Lady	2

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From biorecs 16/08/2019 19:52:47

Group : 1 – Vascular Plants

Field records 17

Species recorded 105

Name	Code	Name	No of TNs from which recorded	Status
Acer pseudoplatanus	5	Sycamore	3	
Achillea millefolium	7	Yarrow	7	
Agrimonia eupatoria	22	Agrimony	1	
Agrostis capillaris	40	Common Bent	6	
Agrostis stolonifera	39	Creeping Bent	3	
Alchemilla mollis	2255	Garden Lady's-mantle	1	
Alnus glutinosa	77	Alder	1	
Alnus incana	78	Grey Alder	6	
Anthoxanthum odoratum	121	Sweet Vernal-grass	2	
Anthriscus sylvestris	125	Cow Parsley	2	
Arrhenatherum elatius	169	False Oat-Grass	8	
Bellis perennis	231	Daisy	2	
Betula pubescens	240	Downy Birch	1	
Betula sp.	L6133.0	a birch	4	
Bromus hordeaceus subsp.hordeaceus	270	Common Soft-brome	1	
Bromus hordeaceus	269	Soft-brome	1	
Buddleja davidii	277	Butterfly-bush	4	
Calystegia sepium sens.lat.	2248	Hedge Bindweed	1	
Calystegia sepium subsp.sepium	311.2	Hedge Bindweed	1	
Calystegia sepium	311	Hedge Bindweed	1	
Calystegia silvatica	313	Large Bindweed	2	
Carex remota	412	Remote Sedge	1	
Carex spicata	357	Spiked Sedge	2	Local Importance
Centaurea nigra	444	Common Knapweed	10	
Centaureum erythraea	5486	Common Centaury	2	
Cerastium fontanum	467	Common Mouse-ear	2	
Chamaecyparis lawsoniana	2398	Lawson's Cypress	1	Planted
Chamerion angustifolium	477	Rosebay Willowherb	5	
Cirsium arvense	515	Creeping Thistle	3	
Cirsium vulgare	522	Spear Thistle	1	
Corylus avellana	557	Hazel	9	
Cotoneaster bullatus	2928	Hollyberry Cotoneaster	1	
Crataegus monogyna	569	Hawthorn	5	
Crepis capillaris	572	Smooth Hawk's-beard	1	
Cynosurus cristatus	597	Crested Dog's-tail	3	
Dactylis glomerata	607	Cock's-foot	8	
Daucus carota subsp.carota	620	Wild Carrot	2	
Dryopteris filix-mas agg.	664	Common Male Fern	2	
Epilobium hirsutum	692	Great Willowherb	3	
Epilobium montanum	695	Broad-leaved Willowherb	1	
Epilobium obscurum	696	Short-fruited Willowherb	2	
Equisetum arvense	712	Field Horsetail	1	
Erigeron acris	733	Blue Fleabane	1	Local Importance
Festuca rubra agg.	824	Red Fescue	1	

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<i>Festuca rubra</i>	825	Red Fescue	5	
<i>Fraxinus excelsior</i>	841	Ash	9	
<i>Galium aparine</i>	873	Cleavers	4	
<i>Geranium dissectum</i>	907	Cut-leaved Crane's-bill	2	
<i>Geranium robertianum</i>	918	Herb-Robert	2	
<i>Geum urbanum</i>	925	Wood Avens	4	
<i>Hedera helix</i> agg.	952	Ivy	2	
<i>Holcus lanatus</i>	983	Yorkshire-fog	5	
<i>Holcus mollis</i>	984	Creeping Soft-grass	3	
<i>Hypericum maculatum</i>	1006	Imperforate St John's-wort	2	
<i>Hypericum perforatum</i>	1014	Perforate St John's-wort	2	
<i>Hypochaeris radicata</i>	1020	Cat's-ear	1	
<i>Juncus tenuis</i>	1077	Slender Rush	3	
<i>Lapsana communis</i>	1104	Nipplewort	3	
<i>Leontodon hispidus</i>	1130	Rough Hawkbit	1	
<i>Lolium perenne</i>	1183	Perennial Rye-grass	4	
<i>Lotus corniculatus</i>	1191	Common Bird's-foot-trefoil	2	
<i>Lotus pedunculatus</i>	1194	Greater Bird's-foot-trefoil	2	
<i>Matricaria discoidea</i>	1242	Pineappleweed	4	
<i>Medicago lupulina</i>	1250	Black Medick	1	
<i>Odontites vernus</i>	1361	Red Bartsia	2	
<i>Phleum pratense</i> sens. lat.	2247	Timothy	1	
<i>Phleum pratense</i> subsp. <i>pratense</i>	6933	Timothy	1	
<i>Phleum pratense</i>	1463	Timothy	1	
<i>Plantago lanceolata</i>	1487	Ribwort Plantain	4	
<i>Plantago major</i>	1488	Greater Plantain	3	
<i>Poa annua</i>	1495	Annual Meadow-grass	2	
<i>Poa trivialis</i>	1507	Rough Meadow-grass	1	
<i>Polygonum aviculare</i> agg.	1522	Knotgrass	1	
<i>Polygonum polychnemiforme</i>	L0018.0	a knotgrass	2	
<i>Potentilla anserina</i>	1584	Silverweed	1	
<i>Potentilla reptans</i>	1594	Creeping Cinquefoil	2	
<i>Prunus laurocerasus</i>	1615	Cherry Laurel	1	
<i>Prunus spinosa</i>	1617	Blackthorn	1	
<i>Quercus robur</i>	1640	Pedunculate Oak	5	
<i>Ranunculus acris</i>	1642	Meadow Buttercup	1	
<i>Rosa canina</i> agg.	1708	Dog-rose	4	
<i>Rosa</i> sp.	1705	a Rose	4	
<i>Rubus fruticosus</i> agg.	1728	Bramble	13	
<i>Rumex crispus</i>	1742	Curled Dock	1	
<i>Rumex obtusifolius</i>	1748	Broad-leaved Dock	2	
<i>Rumex sanguineus</i>	1753	Wood Dock	1	
<i>Salix caprea</i>	1788	Goat Willow	2	
<i>Salix cinerea</i> subsp. <i>oleifolia</i>	1786	Rusty Willow	1	
<i>Sambucus ebulus</i>	1814	Dwarf Elder	1	Local Importance
<i>Scorzonoides autumnalis</i> var. <i>coronopifolia</i>	L6578.0	Autumn Hawkbit	3	
<i>Scorzonoides autumnalis</i>	1129	Autumn Hawkbit	3	
<i>Senecio jacobaea</i>	1899	Common Ragwort	5	
<i>Sonchus asper</i>	1953	Prickly Sow-thistle	1	
<i>Sorbus aucuparia</i>	1960	Rowan	3	
<i>Symphoricarpos albus</i>	2022	Snowberry	2	
<i>Taraxacum</i> agg.	2034	Dandelion	7	
<i>Torilis japonica</i>	2069	Upright Hedge-parsley	6	
<i>Trifolium pratense</i>	2091	Red Clover	3	
<i>Tripleurospermum inodorum</i>	1241.1	Scentless Mayweed	1	

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Ulex europaeus	2112	Gorse	2
Urtica dioica	2126	Common Nettle	2
Veronica chamaedrys	2168	Germander Speedwell	4
Veronica serpyllifolia	2180	Thyme-leaved Speedwell	1
Vicia sativa	2516	Common Vetch	1
Vulpia bromoides	2226	Squirreltail Fescue	3

TotalSpeciesRecords - 291

Group : 15 - Lepidoptera

Field records 10

Species recorded 6

Name	Code	Name	No of TNs from which recorded	Status
Inachis io	1597	Peacock	1	
Maniola jurtina	1626	Meadow Brown	2	
Pararge aegeria	1614	Speckled Wood	3	
Pieris brassicae	1549	Large White	1	
Polyommatus icarus	1574	Common Blue	1	
Vanessa cardui	1591	Painted Lady	4	

TotalSpeciesRecords - 12

Group : 37 - Birds

Field records 6

Species recorded 6

Name	Code	Name	No of TNs from which recorded	Status
Blue Tit	1462	Parus caeruleus	1	
European Goldfinch	1653	Carduelis carduelis	1	
Great Tit	1464	Parus major	1	
Green Woodpecker	856	Picus viridis	1	
Herring Gull	592	Larus argentatus	2	Sect.7, Red List
Wood Nuthatch	1479	Sitta europaea	1	

TotalSpeciesRecords - 7

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APPENDIX 4**ECOLOGY, SURVEY METHODS, CONSERVATION STATUS AND PROTECTION
LEGISLATION OF PROTECTED AND SIGNIFICANT FAUNA**

Not all of the species included below may be present at this site but are included here for completeness.

Bats (Chiroptera)**Ecology and conservation status**

Different bat species have different life-cycle strategies but, in general, each requires the following features:

- hibernation roost sites, where stable winter temperatures allow a period of winter torpor (e.g. underground sites such as caves and mines, or crevices and hollows in mature standing trees),
- nursery roost sites, where females gather in the spring/early summer to give birth and rear their single offspring (e.g. roof spaces, crevices and hollows in mature standing trees),
- roost sites for individual, or small congregations of, males during spring-autumn (e.g. roof spaces, or crevices and hollows in mature standing trees),
- an insect-productive (usually ecologically diverse) feeding environment,
- additionally, there is, as yet, a poorly understood need for social-gathering sites at certain times of the year (e.g. the autumn mating season) for some, or all, species.

Most, if not all, British bat species are believed to be in decline; main threats to bat populations can be summarised as:

- the loss of invertebrate-rich foraging areas (eg. woodland, hedgerows, ponds),
- the loss of nursery and hibernation roosts (eg. Caves and mines, roof spaces, large standing trees), and
- the effects of toxic chemicals (eg. timber preservatives in roof-space roosts, agricultural insecticides which reduce prey species).

All British bats are protected under Schedule 5 of the Wildlife and Countryside Act (as amended by the Countryside and Rights of Way Act 2000), and are listed in Schedule 2 of the Conservation (Natural Habitats &c.) Regulations 1994 (the "Habitat Regulations", which implement the EC Habitats and Species Directive in the UK). These legal instruments make it an offence to kill, injure or disturb a bat or to damage, destroy or obstruct a place of rest or shelter (roost), even when unoccupied.

A licence, issued by Natural Resources Wales under regulation 44(2)(e) of the Habitats Regulations, is required for actions or works which compromise the protection afforded to European Protected Species.

Following an August 2007 re-interpretation of the two key legislations, the concept of "significance" is now applied to "disturbance" issues. In some situations, it can be considered that a proposed disturbance falls below a significance threshold and a licence from the Welsh Government will not be required. However, in such circumstances, disturbing a bat remains an offence under the Wildlife and Countryside Act. To avoid such an offence, the Statutory Nature Conservation Organisation (in Wales, Natural Resources Wales) must be allowed a reasonable time to advise and comment (Ref: *Disturbance and protected species: understanding and applying the law in England and Wales. A view from Natural England and the Countryside Council for Wales. Aug 2007.*)

The two Pipistrelles, Greater and Lesser Horseshoe, Barbastelle and Bechstein bats are UK Biodiversity Action Plan Priority Species and are *Species of Principal Importance for Conservation of*

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Biological Diversity in Wales listed under Section 74 of the Countryside and Rights of Way Act 2000 as reviewed under Section 40 of the Natural Environment and Rural Communities Act 2006, listed at Section 42 of that Act and subsequently listed under section 7 of the Environment (Wales) Act 2016. All bats are also covered by a Species Action Plan implemented in most Local Biodiversity Action Plans.

Applications for Planning Consent

In the event of bat presence at a proposed development site where planning consent is sought, appropriate mitigation measures will be required prior to the disturbance or demolition of the buildings or other features used as bat roosts in order to ensure that replacement roosts are provided before the existing roosts are destroyed.

Where development may result in disturbance to bat roosts, mitigation measures will be recommended which are based on the surveyors' experience of similar situations, with reference to *Bat Mitigation Guidelines* (English Nature, 2004) and the *Bat Workers' Manual* 3rd ed. (JNCC, 2004) and, where necessary, in consultation with Natural Resources Wales.

These measures will need to be approved by Natural Resources Wales (NRW) prior to an application to the Welsh Government for a *Licence to Disturb a European Protected Species*. NRW will need to be consulted, approve and endorse the mitigation proposals before the application for planning consent can be considered by the Local Planning Authority's Development Control staff. This early consideration seeks to

- i) avoid changes in planning designs following the granting of planning consent,
- ii) ensure that Local Planning Authorities comply with regulation 3(4) of the Habitats Regulations, and
- iii) allow NRW to properly advise the Local Planning Authority.

Survey Methods

An external and internal daytime search of potential roost features is carried out, searching for possible bat entry/exit points, other evidence, principally faeces, of bat entry to buildings and direct evidence of roosting bats.

On-site trees are visually examined from the ground with the aid of x10 binoculars and x15-45 telescope, as necessary, seeking physical characteristics which might shelter bats including:

- *cracks*: including inter-stem interstices, deeply fissured bark and/or lifted bark plates, elongated holes, twisted and breaking limbs (used by eg pipistrelle and *Myotis* spp.)
- *splits*: including shattered or broken limbs and trunks (used by eg Barbastelle)
- *holes*: including lost-limb rot at main stem, woodpecker holes (used by eg Noctule)
- *deadwood/basal rot*: a good indicator of internal cavities/hollow stems
- *ivy*: where ivy stems are sufficiently mature to form plates behind which bats might roost and/or which are sufficiently massive to obscure other roost-potential (eg holes).

Evidence of use is sought including urine staining, faeces, etc.

Assessment is also made of

- i) the potential foraging value of the site during the spring-summer-autumn period of bat activity,
- ii) potential bat-travel lines through/around the site.

Bat activity is assessed by direct observation of potential roosts before and after dusk (ie the period when bats emerge from roost sites) in order to detect any bat use of the feature. Electronic, eg heterodyne and time-expansion ultrasound, detectors are used to ensure detection of all species, including low- and high-range frequency bats.

Bat Roost potential

Trees should be assessed for their potential to provide bat roosting sites and scored using the following classification system:

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<i>Tree assessment category</i>	<i>Stage 1</i>	<i>Stage 2</i>	<i>Constraints to tree felling or disturbance</i>
Known or confirmed roost	European Protected Species Licence is required in order to carry out the felling or disturbance legally. This will require further input from a licenced bat ecologist		
Category 1* multiple features suitable for multi-animal use	further assessment required pre-works to determine use using either <u>direct examination survey</u> and/or <u>direct observation emergence/ entry survey</u>	<i>Either</i> Proceed as for a "known or confirmed roost" (above) <i>or</i> "soft felling" supervised by the ecologist	<i>Either</i> European Protected Species Licence must be procured <i>or</i> "soft felling" supervised by the ecologist
Category 1 Fewer or less suitable features, and/or potential for individual roosting	Further assessment will be required pre-works to determine bat use by means of a general bat-activity survey,	<i>Either</i> Proceed as for a "known or confirmed roost" (above) <i>or</i> as category 2 (below)	<i>Either</i> European Protected Species Licence must be procured <i>or</i> Take reasonable care during works- stop work & seek advice if potential roost features found
Category 2 No features visible from the ground but the size or age of the tree might or obscuring ivy might point to the potential for roost features	None unless new evidence is found during works	none	Take reasonable care during works- stop work & seek advice if potential roost features found
Category 3 no potential to host roosting bats	none	none	none

Otter (*Lutra lutra*)

Ecology and conservation status

The Otter is a semi-aquatic mammal, dependent on fish/ amphibians for food, and requiring dense vegetation and/or bankside holes for sheltered resting/breeding sites ("holts"). Individual animals inhabit territories which may extend along many kilometres of watercourse: such territories include many holts.

The Otter is a species of high conservation concern in the UK, having disappeared from most of its range during the 1950/60s. The species has made a dramatic recovery during the past 10-15 years,

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following i) the withdrawal of various (largely agricultural) chemical pollutants, and ii) efforts to improve water quality and riparian habitats.

The Otter is protected by its inclusion on Schedule 5 of the Wildlife & Countryside Act 1981 (as amended), Appendix II of the Bern Convention, Annexes II and IV of the Habitats Directive, Schedule 2 of the Conservation (Natural Habitats) Regulations, 1994, and Appendix 1 of CITES. Section 9 of the Wildlife & Countryside Act provides that it is an offence to kill, injure or take an animal, to have an animal in one's possession, to offer an animal (or parts/derivatives thereof) for sale, or **to damage, destroy or obstruct access** to a place or structure being used for shelter or protection.

Any development work to be carried out which affects a holt or is in the vicinity of a holt (generally taken to be 30m radius) can only be undertaken following the granting of a licence by Natural Resources Wales (NRW) acting under regulation 44(2)(e) of the Habitats Regulations, which is a requirement for actions/works which may affect European Protected Species. NRW will only issue such a licence when it is satisfied that the well-being of the protected species will not be compromised.

The Otter is a Priority Species in the UK Biodiversity Action Plan and is a *Species of Principal Importance for Conservation of Biological Diversity* in Wales listed under Section 74 of the Countryside and Rights of Way Act 2000 as reviewed under Section 40 of the Natural Environment and Rural Communities Act 2006, listed at Section 42 of that Act and subsequently listed under section 7 of the Environment (Wales) Act 2016. It is also a species for which a Species Action Plan has been implemented in the most Local Biodiversity Action Plans.

Survey Methods:

Otter survey methodology includes the examination of all watercourses for field evidence of Otter presence within the site and its vicinity. An assessment of the potential for Otter usage of the site at other seasons is also made.

Otter field signs are sought. These include spraint (characteristic faeces, often deposited in prominent positions along watercourses), footprints, holts and feeding remains. The habitat along and in the vicinity of the watercourse is also assessed for potential Otter rest-sites. Potential other-season feeding sites are also sought, eg sites that may support amphibian assemblages in late winter to early spring.

Watercourses are also assessed for their potential as Otter travel routes, eg between main rivers and streams, across watersheds and to likely off-site feeding areas.

Reedbeds, dense bankside bramble scrub and other heavily vegetated river or stream banks may offer potential resting sites for otters, ie sites that might be used for single-day lying-up. These potential sites are also assessed and recorded during the survey.

Dormouse (*Muscardinus avellanarius*)**Ecology and conservation status**

The dormouse is a nocturnal animal that lives and feeds among the branches of trees and shrubs. When active animals rarely descend to the ground and are reluctant to cross open spaces. Dormice become torpid in cold temperatures in order to conserve energy and retire into spherical nests woven from grass, stripped honeysuckle bark etc, often located low in dense vegetation or hedge-bottoms. Depending upon the season, animals can be expected to be torpid between October to May inclusive.

Dormice live at low population densities (up to 5/ha), so single small woodlands generally do not contain viable populations. Generally, woodlands less than 20 hectares in size are unlikely to sustain Dormice indefinitely, unless they form part of a network linked by hedges or woodland strips. Dormice do not have large ranges (typically less than 1 ha in the course of a whole summer) and rarely go more than 70m from their daytime nest.

Dormice feed on flowers (nectar and pollen), fruits (berries and nuts) and some insects (especially aphids and caterpillars). In spring and early summer, the dormouse must move from one tree species to another, as the different flowers become available. In the autumn there is abundant food, but as

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most berries and nuts are not ripe before about August there is a period of potential plant food shortage. Insects may be particularly important in the diet at this season, but insects (particularly aphids and caterpillars) are consumed at all times. A high diversity of trees and shrubs is most likely to ensure that an unbroken sequence of foods is available. Valuable species include Hazel, Oak, Honeysuckle, Sycamore, Wayfaring tree, Yew, Hornbeam, Sallow, Birch, Sweet Chestnut, Blackthorn, Hawthorn, Cherry, Crab-apple, Rowan, Ash, Holly, Bramble, Bracken, Broom and rank Heather.

Dormice require high species diversity of trees and shrubs in a mosaic of age classes with a multi-storied canopy structure and an abundance of edge-habitat, with plenty of links between them and suitable hedgerows and other connecting scrubby habitats across the landscape. The best habitats seem to have a vigorous, unshaded shrub layer producing plenty of food with some mature canopy trees. Coppice with standards woodlands managed on a long rotation is probably the ideal environment for Dormice, although coupe management is also an important management consideration.

Any development work to be carried out which may affect either individual dormice or their habitat must only be undertaken following the granting of a licence by Natural Resources Wales (NRW) acting under regulation 44(2)(e) of the Habitats Regulations, which is a requirement for actions/works which may affect European Protected Species. NRW will only issue such a licence when it is satisfied that the well-being of the protected species will not be compromised. See further details under bats (above).

The Dormouse is a Priority Species in the UK Biodiversity Action Plan and is a *Species of Principal Importance for Conservation of Biological Diversity* in Wales listed under Section 74 of the Countryside and Rights of Way Act 2000 as reviewed under Section 40 of the Natural Environment and Rural Communities Act 2006, listed at Section 42 of that Act and subsequently listed under section 7 of the Environment (Wales) Act 2016. It is also covered by a Species Action Plan implemented in most Local Biodiversity Action Plans.

Survey Methods:

The habitats within the study area are assessed for their suitability to support Dormice, those habitat characteristics described above, searching for field-signs, indicative but not diagnostic of dormouse presence such as nests, stripped honeysuckle bark, frayed honeysuckle bark (evidence of nest building), chewed ash keys and chewed honeysuckle flowers) and characteristically opened hazel nut shells. The classic survey method is to make timed searches for characteristically opened hazel nuts in the vicinity of hazel bushes in hedgerows, scrub, coppices and woodland. However, this method can only detect the species where hazel is present. A more reliable method is to place survey tubes in suitable habitat, eg hedgerow corridors, and check these on a monthly basis during late spring to early autumn, examining them for hair samples collected by a sticky pad in the tube. Other survey methods may involve nest box monitoring and radio-tracking.

Water Vole (*Arvicola terrestris*)**Ecology and conservation status**

Principally found in slow running rivers and ponds with plentiful emergent vegetation, on which they largely feed, this species is believed to have declined nationally by some 90% in the last thirty years. Predation by Mink is considered to be an important factor; other factors include pollution and habitat loss/degradation.

Water Voles and their habitats are protected under schedule 5 of the Wildlife & Countryside Act 1981, (as amended), appendix II of the Bern Convention, annexes II and IV of the Habitats Directive, schedule 2 of the Conservation (Natural Habitats) Regulations 1994, and appendix 1 of CITES. Advice must be sought from Natural Resources Wales prior to the commencement of any development works within or within the vicinity of water vole habitat. NRW will generally require mitigation measures to be undertaken to ensure that the habitat available for the species is not reduced.

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Survey Methods:

Survey all on-site watercourses for field evidence of Otter and Water Vole activity or presence.

Water Vole survey is best carried out in late May and June which allows the maximum opportunity for field-signs to develop following the Voles' winter period of semi-hibernation. Survey is conducted by systematic hand-search, on one bank of all watercourses for faeces, burrows and runways, feeding sites and footprints.

Badger (*Meles meles*)**Ecology and conservation status**

Badgers are opportunistic omnivores, taking a range of fruits, nuts and cereals. In Britain, earthworms are the single most important food item. Varied habitats, with a range of natural and semi-natural features, support the greatest numbers of animals. Woodland is usually chosen for main setts and areas of agriculturally-improved grazing are important sources of earthworms.

Badgers live in social groups, comprising 2-25 animals (average 6). The group defends a territory of 10 - 300 hectares (average 50ha), depending on habitat quality. Such territories are stable over time and contain adequate food resources and underground shelters known as setts to support the social group.

Setts comprise a series of tunnels and chambers in which Badgers rest and breed. Typically, they are dug on south facing slopes in free-draining soils and woodland is favoured for sett sites. Different types of sett are recognised as follows:

- the main sett is in continuous use (in some cases for several hundred years) and is used for breeding.
- annexe setts are close (usually < 150m) to main setts and smaller; they are used infrequently as an alternative to the main sett (perhaps by individuals temporarily excluded because of breeding activity in the main sett).
- subsidiary and outlier setts are used sporadically, typically have one or two holes, and may be located anywhere in the territory.

The Badger and its underground "sett" are protected by various legislation. Schedule 6 of the Wildlife & Countryside Act, 1981, the Bern Convention III and The Protection of Badgers Act 1992. This latter legislation makes it illegal to kill or injure any Badger or to intentionally or recklessly damage, destroy or obstruct access to a sett. Cases have been brought to court by the RSPCA on welfare grounds where significant losses of foraging resources have occurred during development schemes. Any development work to be carried out within the vicinity (generally 30m) of a sett requires a licence to be obtained in advance from Natural Resources Wales or the Welsh Government. Best practice protocols for carrying out developments in the vicinity of Badger setts are outlined at appendix 5.

Survey Methods:

The study area is examined for evidence of Badger presence and activity. Such field signs as setts (the underground breeding/resting holes of Badgers), latrines (dung pits, often used as territory-markers), footpaths (identified by footprints, hairs caught on wire fences) and feeding areas (identified by characteristically disturbed or uprooted ground) would indicate site usage by Badgers and are recorded.

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Other Mammals**Brown Hare (*Lepus europaeus*)**

Populations of Brown Hare are known to have decreased dramatically over the last thirty years, most particularly in pastoral western Britain. The Brown Hare is a Priority Species in the UK Biodiversity Action Plan and is a *Species of Principal Importance for Conservation of Biological Diversity* in Wales listed under Section 74 of the Countryside and Rights of Way Act 2000 as reviewed under Section 40 of the Natural Environment and Rural Communities Act 2006, listed at Section 42 of that Act and subsequently listed under section 7 of the Environment (Wales) Act 2016. It is also covered by a Species Action Plan implemented in most Local Biodiversity Action Plans.

Hedgehog (*Erinaceus europaeus*)

Populations of Hedgehog have declined significantly in recent years, so much so that it has recently been added to the list of *Species of Principal Importance for Conservation of Biological Diversity* in Wales at Section 42 of the Natural Environment and Rural Communities Act 2006 and subsequently listed under section 7 of the Environment (Wales) Act 2016.

Water Shrew (*Neomys fodiens*)**Harvest Mouse (*Micromys minutus*),**

The Water Shrew and Harvest Mouse are little known species whose habitats appear to include reedbed and ditch habitats in south Wales.

For each of these species, long-term and/or season-specific investigation is generally necessary.

Reptiles

Six native reptile species occur in Britain: the Adder (*Vipera berus*), the Grass Snake (*Natrix natrix*), the Smooth Snake (*Coronella austriaca*), the Sand Lizard (*Lacerta agilis*), Common Lizard (*Lacerta vivipara*) and the Slow Worm (*Anguis fragilis*). The Wildlife & Countryside Act 1981 (as amended and including any amendments within the Countryside and Rights of Way Act, 2001) provides varying levels of protection for these species. The Smooth Snake and Sand Lizard are afforded complete protection under schedule 5 of the Act; neither of these species is recorded in Wales. The other four species are protected in respect of killing, injuring and sale. Reptiles are also *Species of Principal Importance for Conservation of Biological Diversity* in Wales listed under Section 74 of the Countryside and Rights of Way Act 2000 as reviewed under Section 40 of the Natural Environment and Rural Communities Act 2006, listed at Section 42 of that Act and subsequently listed under section 7 of the Environment (Wales) Act 2016. They are also covered by a Species Action Plan implemented in most Local Biodiversity Action Plans.

Grass snakes are most commonly associated with wet habitats, and frequently feed on aquatic animals such as frogs. The Adder and Slow Worm are typically associated with drier, heathland habitat and the Common Lizard is found in a wide range of habitats. All these species are cold blooded, and need to bask in sunlight: such basking opportunities are readily found on south-facing slopes, eg free-draining railway and road embankments, and are traditionally good sites to find these species.

Reptile surveys include

1. the assessment of habitats for their suitability for supporting the various species;
2. opportunistic turning of debris to search for animals;
3. surveys by artificial-refugia sheet survey and/or drift-fence/pit-fall trap survey.

Amphibians

Six native amphibian species occur in Britain: the Common Frog (*Rana temporaria*), the Common Toad (*Bufo bufo*), the Natterjack Toad (*Bufo calamita*), the Smooth Newt (*Triturus vulgaris*), the Palmate Newt (*T. helveticus*) and the Great Crested Newt (*T. cristatus*). All amphibians have aquatic egg and larval stages and are therefore dependent on water for successful breeding. Eggs are laid, in suitable ponds, during the early spring, and the larvae (tadpoles) remain in the water for

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several weeks or months. Adults of each of these species typically spend 6-9 months on land in invertebrate-rich feeding areas and in over-winter hibernacula.

The Wildlife & Countryside Act 1981 provides varying levels of protection for these species: the Great Crested Newt is afforded complete protection under schedule 5 of the Act. Any development work to be carried out within an area where this species occurs requires a licence to be obtained in advance from Natural Resources Wales. The Great Crested Newt, Common Toad and Natterjack Toad are *Species of Principal Importance for Conservation of Biological Diversity* in Wales listed under Section 74 of the Countryside and Rights of Way Act 2000 as reviewed under Section 40 of the Natural Environment and Rural Communities Act 2006, listed at Section 42 of that Act and subsequently listed under section 7 of the Environment (Wales) Act 2016 and are Priority Species in the UK Biodiversity Action Plan. Amphibians are also covered by a Species Action Plan implemented in most Local Biodiversity Action Plans.

Amphibian surveys include

1. the assessment of habitats for their suitability for supporting the various species;
2. opportunistic turning of debris to search for animals eg terrestrial phase tailed amphibians (newts) and Common Toad;
3. surveying ponds during the breeding season by direct observation, bottle trapping, netting, torch-light survey and/or egg-observation and
4. terrestrial surveys by opportunistic turning-over of stones and other debris, artificial-refugia sheet survey and/or drift-fence/pit-fall trap survey.

Barn Owl

Ecology

Barn Owls require an undisturbed site in which to nest and a relatively wide area of land over which to hunt. Their diet comprises principally of small-mammals and their hunting territory is usually land which includes a variety of grassland habitats which support good populations of mice, voles, etc. Their nest sites are invariably high-up in barns or dry outbuildings but they will also nest in suitable boxes placed in trees.

Legal status

All bird species receive legal protection under the Wildlife and Countryside Act 1981 with degrees of greater or lesser protection being detailed in various schedules of the Act. For instance, all nests occupied or being built by breeding birds are protected against disturbance and scarce bird species listed on schedule 1 of the Act are afforded comprehensive protection. The Barn Owl is included on schedule 1. Also, many species are protected by international conventions and directives including The EC Birds Directive, The Bonn Convention and the Bern Convention. Barn Owl is included on schedule 2 of the Bern Convention.

The UK Biodiversity Action Plan identifies species and habitats for which conservation action is a priority. In Wales, the list of Priority Species has been amended by the Welsh Assembly Government under Section 74 of the Countryside and Rights of Way Act 2000. This list of species was subsequently reviewed under Section 40 of the Natural Environment and Rural Communities Act 2006 and amended to provide a list of *Species of Principal Importance for Conservation of Biological Diversity* in Wales under Section 42 of that Act, replaced in Wales by the list under section 7 of the Environment (Wales) Act 2016. Whilst the Barn Owl is not included as a *Species of Principal Importance*, most Local Biodiversity Action Plans include it as a species for which conservation action has been implemented. The Pembrokeshire Local Biodiversity Action Plan has implemented such action.

Bird species which have suffered serious population or range declines over the past 25 years are highlighted in *Birds of Conservation Concern* (RSPB, 2002). The Red List includes those species which have suffered >50% decline and the Amber List includes those species which have undergone a 25-50% decline in the past 25 years. The Barn Owl is included on the Amber List.

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Other Birds

Birds occupy all habitats and the various species range from being widespread and common, which are unlikely to pose a significant constraint to planned development works, to those which are rare and therefore of high conservation concern and which may pose a significant constraint.

All bird species receive legal protection under the Wildlife and Countryside Act 1981, with degrees of greater or lesser protection being detailed in various schedules of the Act. Schedule 1 of the Act gives comprehensive protection to scarce species. Also, many species are protected by international conventions and directives including The EC Birds Directive, The Bonn Convention and the Bern Convention.

All bird's nests occupied or being built by breeding birds are protected against disturbance by the Wildlife and Countryside Act 1981. It is therefore recommended that no vegetation clearance or disturbance to other potential nesting habitat is undertaken during the bird breeding season (March to July inclusive) unless it is judged, by a qualified ornithologist, that site operations will not disturb any nesting birds. Such a survey needs to be undertaken immediately prior to the commencement of such works.

The UK Biodiversity Action Plan identifies species and habitats for which conservation action is a priority. In Wales, this list has been slightly amended by the Welsh Assembly Government under Section 74 of the Countryside and Rights of Way Act 2000 which was endorsed when reviewed under Section 42 of the Natural Environment and Rural Communities Act 2006 and subsequently under section 7 of the Environment (Wales) Act 2016. *Species of Principal Importance for Conservation of Biological Diversity* in Wales are those in need of urgent action because, for example, of severe decline in population size or contraction in range.

Bird species which have suffered serious population or range declines over the past 25 years are highlighted in *Birds of Conservation Concern* (RSPB, 2002, frequently updated). The Red List includes those species which have suffered >50% decline and the Amber List includes those species which have undergone a 25-50% decline in the past 25 years.

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APPENDIX 5**BEST PRACTICE PROTOCOL FOR TREE FELLING WHERE TREES HAVE THE POTENTIAL FOR SUPPORTING ROOSTING OR HIBERNATING BATS**

Mature trees with trunk/branch cavities and/or a covering of ivy are particularly valuable bird nesting and bat roost sites, and will be retained wherever possible; compensatory planting with appropriate species will be undertaken where felling is inevitable.

Where tree felling or lopping is planned, such work will only be carried out between August and February to avoid the bird-breeding season.

All bats are protected by the Wildlife and Countryside Act 1981. Bat tree-roosts are extremely difficult to identify, and it should be assumed that any mature native-species tree is an actual roost. Every effort should be made to avoid disturbance or damage to these trees during construction work. It is an offence under the Wildlife and Countryside Act to knowingly disturb bat roosts or hibernacula. To minimise disturbance to bat populations by the removal of trees the following protocol will be followed.

- As far as possible all trees having bat roost potential should be preserved. If it is necessary for trees to be removed, all felling operations will bear due regard to this protocol.
- If bats are found during tree work, then all work will stop and Natural Resources Wales must be informed immediately.
- If the tree trunk is smaller than 200mm diameter and if it has no dense ivy, suitable holes, loose bark, and no holes associated with the root system, then work can be carried out on the tree between September and February (ie avoiding the bird breeding season).
- To avoid disturbing nursery roosts, work must never be carried out between June and August inclusive.
- If the tree does have any of the above or has a trunk size greater than 200mm, it must be cut only in September and October when bats, including young of the year, are still mobile and able to fly-out. If cutting must take place at other times, summer is probably best as bats can be more easily seen, can fly away and may take young with them, thus enabling a better chance of survival. But due regard must also be taken of nesting birds and the presence of other breeding fauna.
- If felling were to take place during hibernation (November to March) the bats will be torpid, difficult to see and the whole roost may be lost as they will be unable to escape.
- Any timber cut will be left lying for at least 24 hours to allow bats the opportunity to escape.
- It is also important to consider to what extent the habitat that is being removed is available elsewhere locally. For example, if only one tree in twenty of similar age or structure is to be felled, then it is likely that the impact of the loss will be less important. If the tree to be felled is solitary and in an area with few or no mature trees, then the impact may be significant.

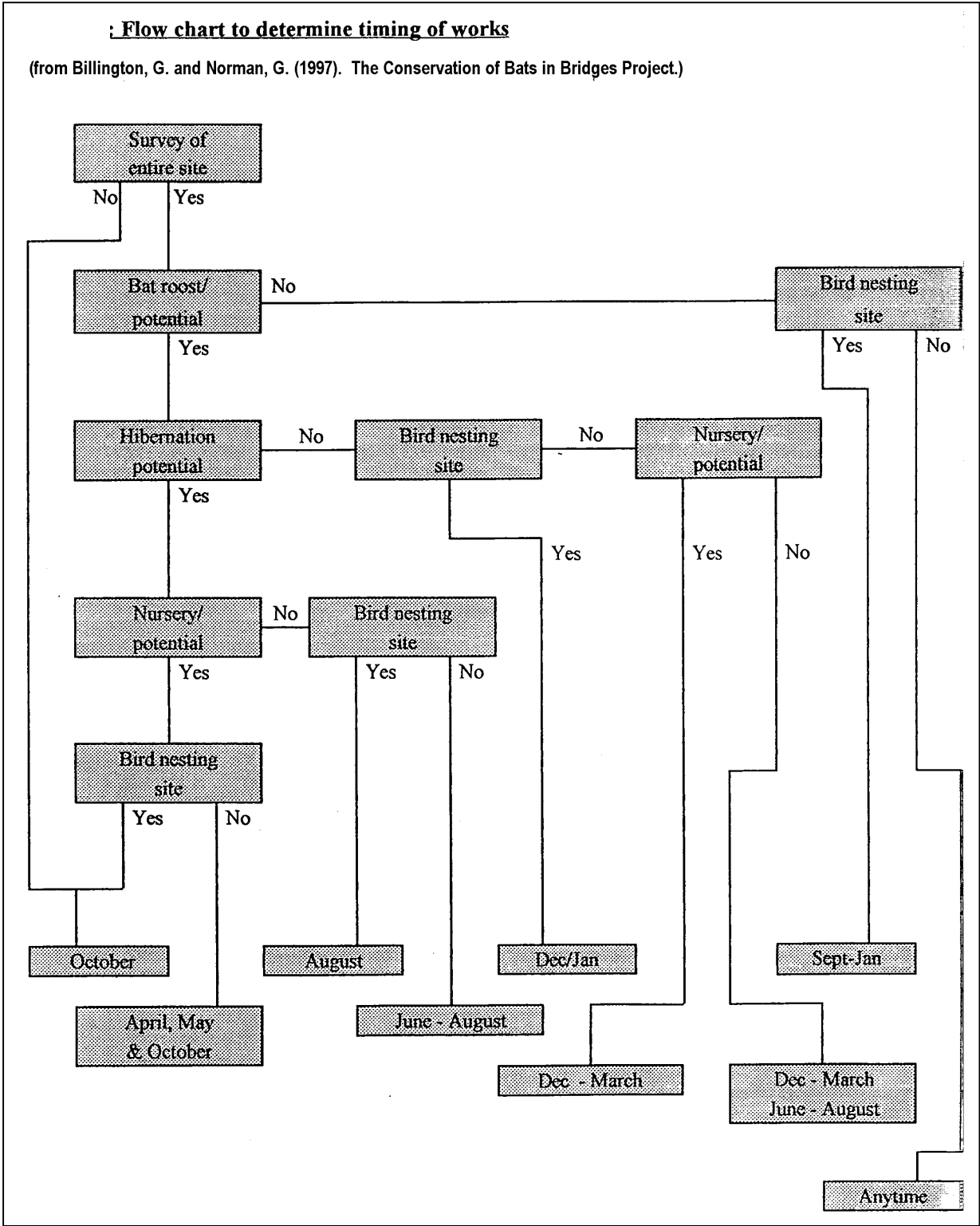
Where the loss of mature trees is unavoidable, compensatory planting with appropriate locally native species of local provenance should be undertaken.

Pryce Consultant Ecologists

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: Flow chart to determine timing of works

(from Billington, G. and Norman, G. (1997). The Conservation of Bats in Bridges Project.)



Land at Collier's Row, Heol Gerrig, Merthyr Tydfil: Preliminary Ecological Appraisal

APPENDIX 6**BEST PRACTICE PROTOCOL PROVIDING FOR THE WELL-BEING OF BADGERS**

If evidence of Badger activity is identified during site surveys or construction works, in order to comply with the Protection of Badgers Act, 1992, it will be necessary to protect all existing setts against disturbance and interference during site works. In general, any disturbance is prohibited within 30m of any active sett unless licensed by Natural Resources Wales or the Welsh Government and then only between the months of July to November inclusive. Significant destruction of foraging grounds may also be judged as an infringement of the law on animal welfare grounds and, in extreme cases, prosecutions have been brought by the RSPCA.

Best practice principles advise that:

- All site personnel are made aware of the presence of setts and foraging grounds
- All site personnel are aware of the implications of the law
- If any setts are found during site works, a substantial fence will be erected, consisting of posts with three plain wires and with clearly visible bunting strung along the top, around each sett, a minimum distance of 30m from any entrance in order to prevent accidental access by any vehicle. A line of bunting supported on road pins is inadequate.
- Fragmentation of Badger territories is minimised during construction works.
- Existing Badger paths will not be obstructed during site works.
- All trenches dug on site will be provided with escape ramps, sloping boards or battered sides to allow any trapped animals to escape. As few trenches as possible will remain open on site over night.
- Fires will not be built near any sett.
- Any chemicals or other noxious substances stored on site will be in an area which is proofed against Badgers.
- If necessary, replacement foraging resources will be provided for the duration of the works.
- Landscaping proposals will bear due regard to the needs of foraging Badgers by the provision of infrequently cut grass verges and native species fruiting trees and shrubs.

SIGNIFICANT SPECIES and HABITATS: Recommended Times of Work to avoid undue disturbance												
	January	February	March	April	May	June	July	August	September	October	November	December
ct.42)				Limited disturbance to roosts permitted under licence but preferable in September & October					Felling under licence best done now. Felled trees of >20cm diameter must be left to lie on the ground for 24hrs to allow any bats to escape			
ect 7)									Disturbance to Otter sites limited to between Sept and Jan and is subject to licence from NRW			
ect 7)			Disturbance subject to licence from NRW						Disturbance subject to licence from NRW			
			Disturbance subject to NRW approval						Disturbance subject to NRW approval			
								Work within 30m of a sett or annex permitted and sett closure permitted: all subject to NRW licence				
	Consult a qualified ecologist before carrying out any works in areas identified as supporting these species											
981,	No disturbance at any time.											
	Vegetation clearance permissible		Avoid disturbance to potential nesting habitat during this period unless, immediately prior to commencement of works a qualified ornithologist certifies that no active bird's nests will be disturbed.						Vegetation clearance permissible			
									Disturbance of breeding or terrestrial habitat should only be carried out between September and January and is subject to licence from NRW			
1, sch.5,								Disturbance of amphibian breeding ponds should only be carried out during August to January inclusive				
1, sch.5,			Disturbance to potential terrestrial habitat should be preceded by a capture and translocate operation or 'destructive search'									
			Disturbance to potential terrestrial habitat should be preceded by a capture and translocate operation or 'destructive search'									
7)	Areas supporting Marsh Fritillaries must not be disturbed except after consultation and advice from NRW											
	Consult a qualified ecologist before carrying out any works in areas identified as supporting these species											
ological	Habitats of Principal Importance should not be disturbed at any time of year without prior consultation with a qualified ecologist											
	Important hedgerows may only be removed following the issue of a <i>Hedgerow Removal Order</i> or a valid planning consent issued by the local planning authority											
es)	Changes to qualifying habitats may only be undertaken after a favourable Screening Decision is given by the Welsh Government or an application for change of use has been approved											

APPENDIX 8

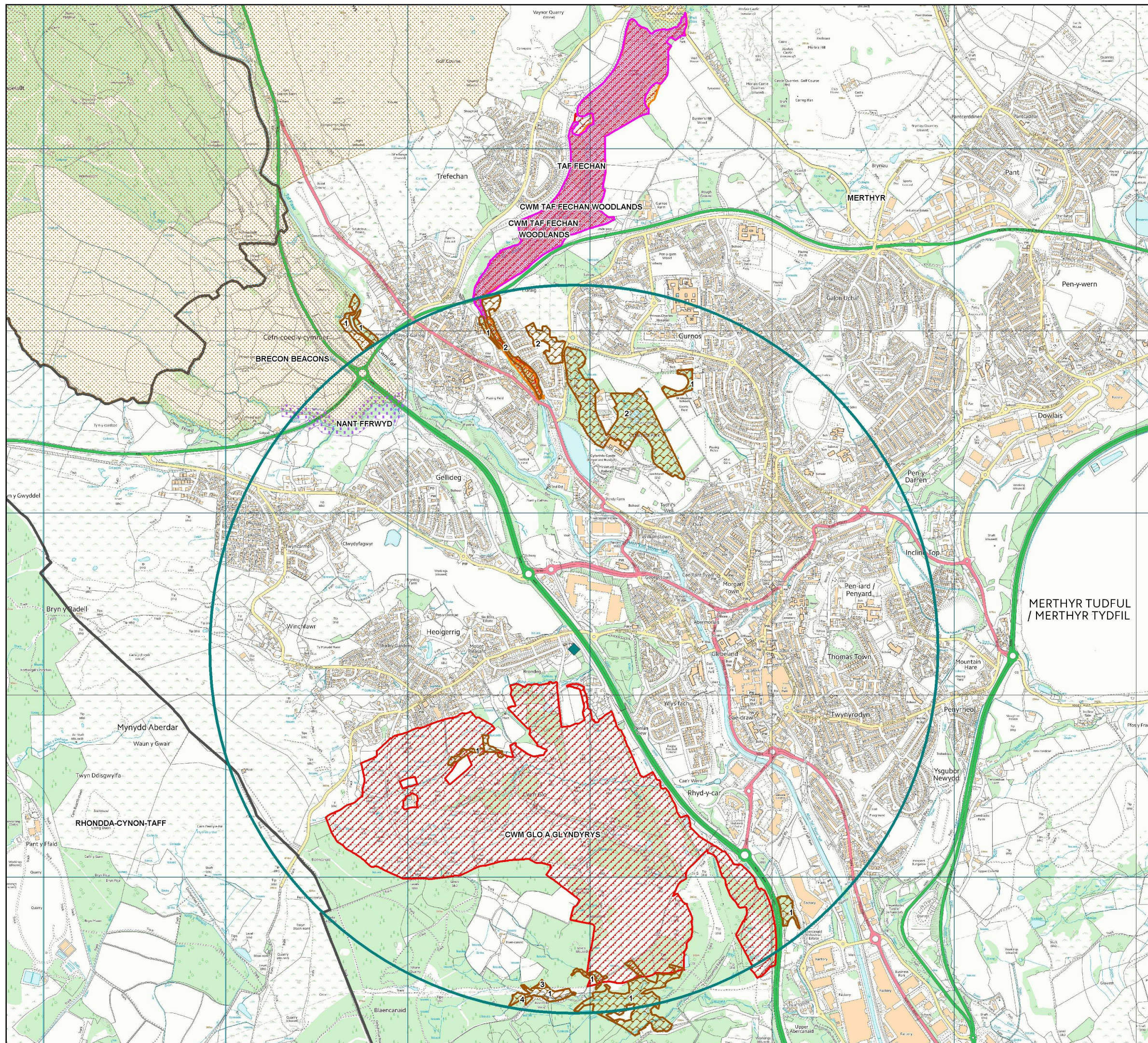
DATA RECEIVED FROM THE SOUTH-EAST WALES BIOLOGICAL RECORDS CENTRE (SEWBRcC)

The following pages include the maps provided by SEWBRcC of protected and significant sites from within 2km radius of the survey site, centred at SO 03912 06251.

A summary of protected and significant species data is provided at Tables 2.1 – 2.5 in the text above. The complete species dataset received from SEWBRcC has not been included in this document but is available on request.

**BIODIVERSITY INFORMATION
SEARCH (SPECIES AND
DESIGNATED SITES):**

**COLLIERS ROW
SO0391206251**



- Centre of Search Area
- 2km Search Buffer
- Site of Special Scientific Interest
- National Park
- Local Nature Reserve
- Wildlife Trust Reserve
- Regionally Important Geological Site (RIGS)
- Ancient Woodland
1: ASNW; 2: RAWs; 3: PAWS; 4: AWSU
See report for full descriptions
- Unitary Authority

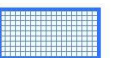
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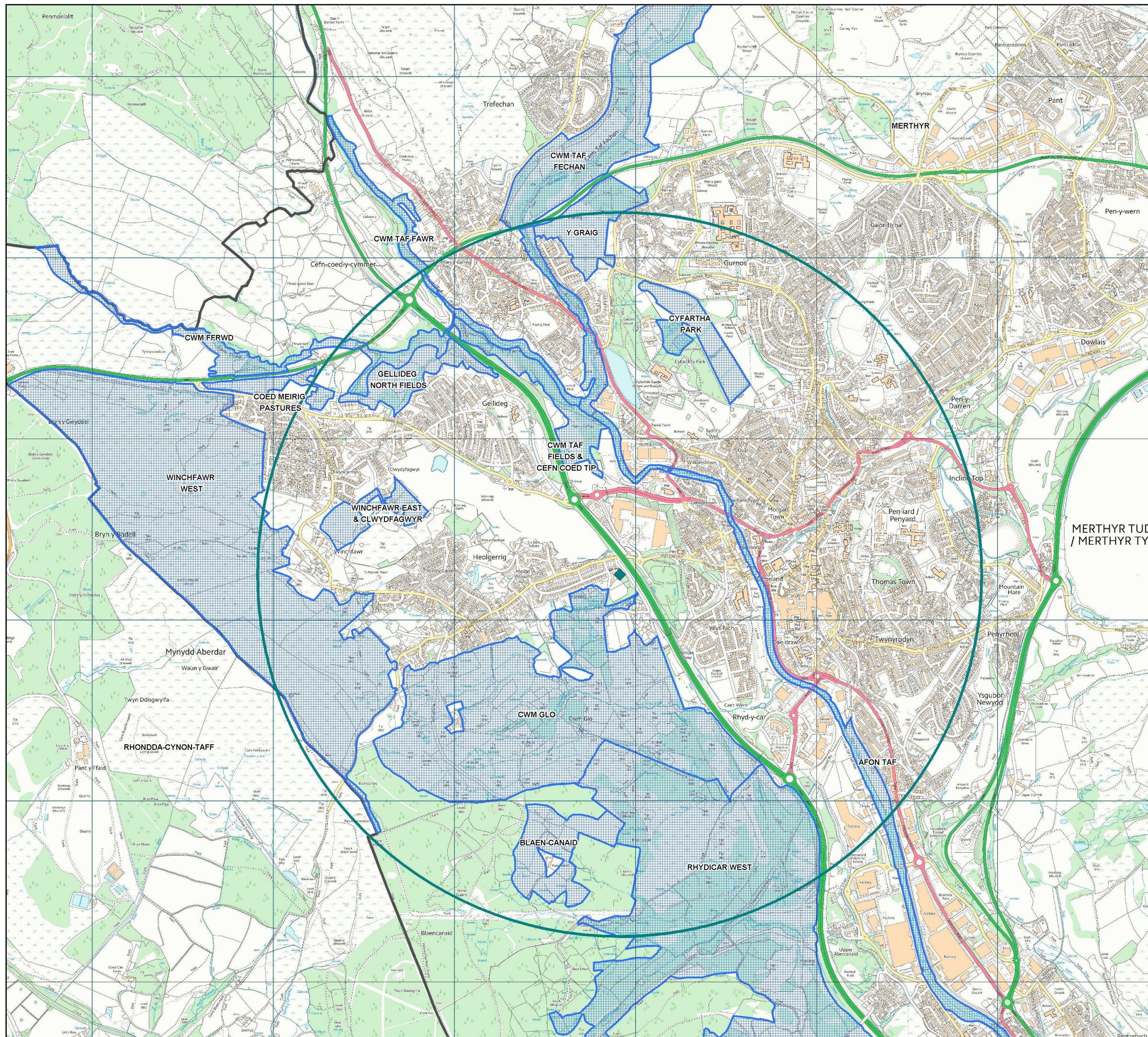
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**BIODIVERSITY INFORMATION
SEARCH (SPECIES AND
DESIGNATED SITES):**

**COLLIERS ROW
SO0391206251**

-  Centre of Search Area
-  2km Search Buffer
-  Site of Importance for Nature Conservation (SINC)
-  Unitary Authority Boundary

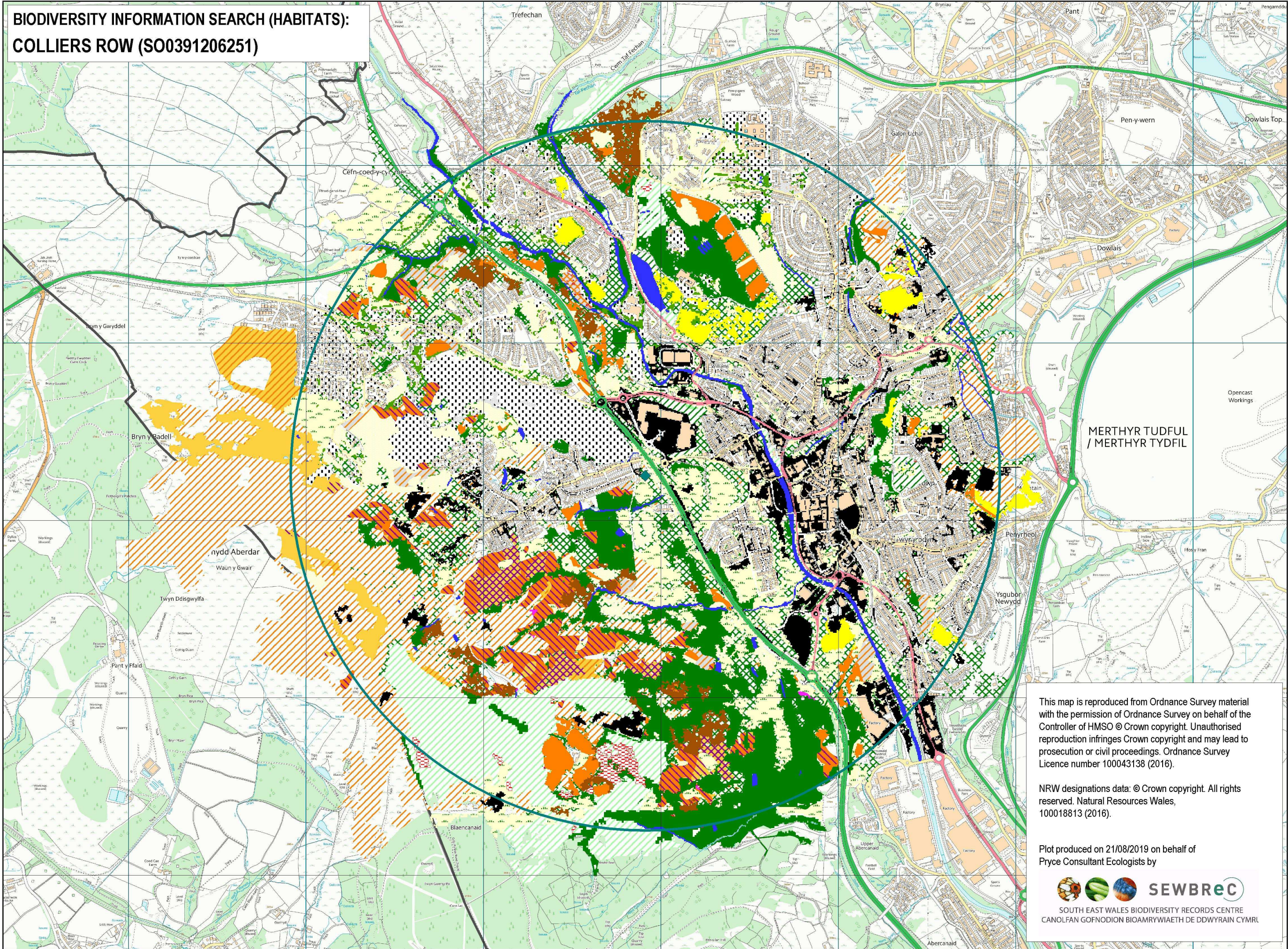


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**BIODIVERSITY INFORMATION SEARCH (HABITATS):
COLLIERS ROW (SO0391206251)**

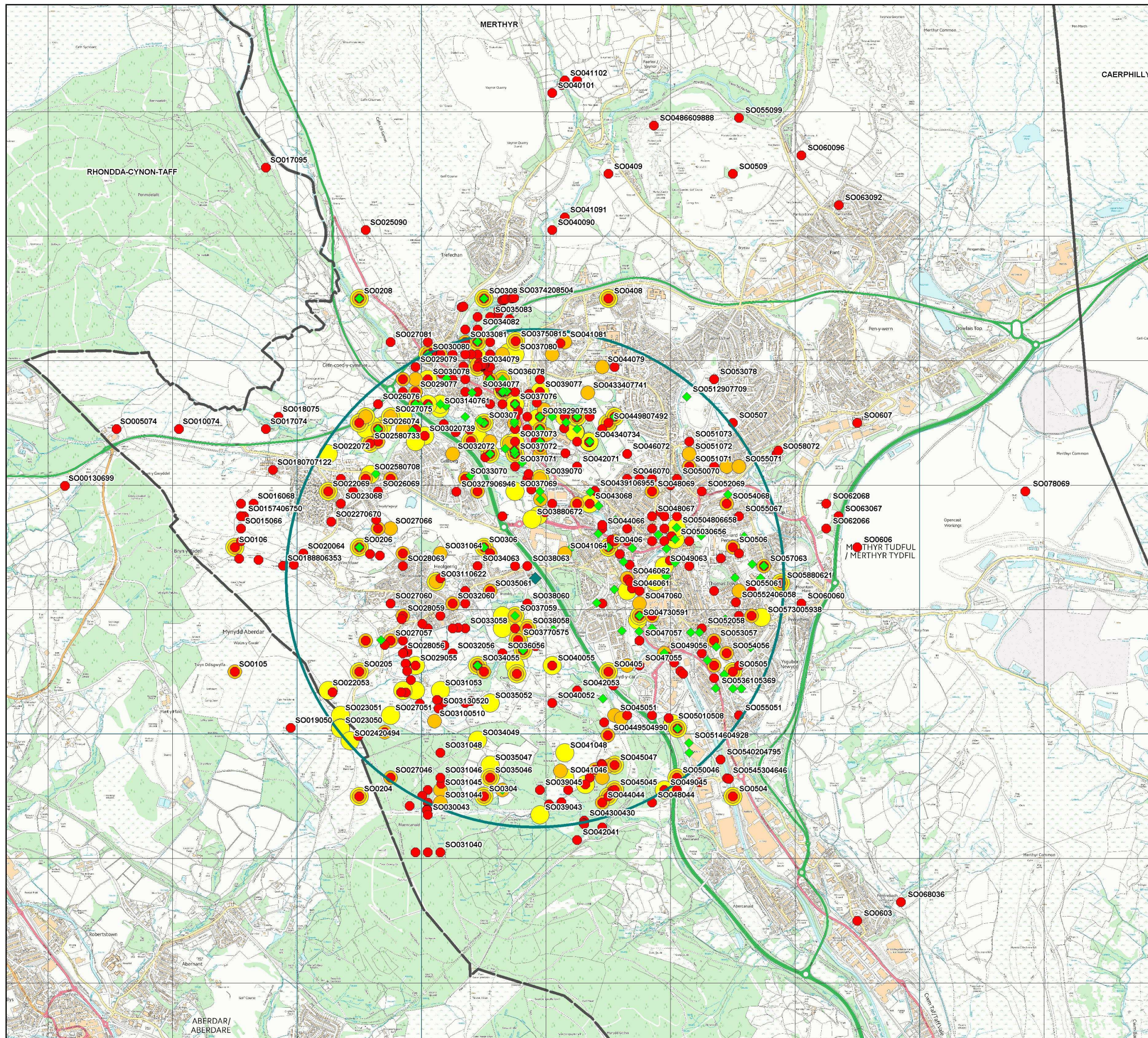


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 **SEWBReC**
SOUTH EAST WALES BIODIVERSITY RECORDS CENTRE
CANOLFAN GOFNODION BIOAMRYWIAETH DE DDWYRAIN CYMRU



BIODIVERSITY INFORMATION SEARCH (SPECIES AND DESIGNATED SITES):

COLLIERS ROW
SO0391206251

- Centre of Search Area
- 2km Search Buffer
- Priority and Protected Species
- Other Species of Conservation Concern
- Species of Local Conservation Concern
- Invasive Non-Natives
- Unitary Authority Boundary

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