

Land at Twynyrodyn, Merthyr Tydfil

Grid Reference SO05969 05665

Extended Phase I Habitat Survey/Preliminary Ecological Assessment Report

For Persimmon Homes

January 2019

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1 Introduction

1.1 Survey Brief

TerrAqua Ecological Services Ltd was commissioned by Persimmon Homes to undertake an Extended Phase I Habitat Survey/Preliminary Ecological Assessment of a parcel of land at Twynyrodyn, Merthyr Tydfil, Grid Reference SO05969 05665. The survey boundary was taken as that supplied by Mr Morgan Williams Planning Manager for Persimmon Homes.

The survey was undertaken in January 2019 in order to evaluate any ecological issues that may be present within the site and allow for any ecological constraints to be considered during any future use of the site.

1.2 Client Details

The survey was undertaken on behalf of Persimmon Homes, Persimmon House, Llantrisant Business Park, Rhondda Cynon Taf following instructions to proceed by Mr Morgan Williams, acting for Persimmon Homes.

2 Background

2.1 Rational

The survey was commissioned by the client prior to an application for the re-development of the site for residential use. This Extended Phase I Survey/Preliminary Ecological Appraisal will ascertain the ecological value of the site and identify any further ecological survey work required to complete a full appraisal and to ensure compliance with current legislation. All conclusions and recommendations made within this report are based solely on the information collected during the Extended Phase I Habitat survey and associated data search results.

2.2 Site Description

The site is located within a residential area of the village of Twynyrodyn, Merthyr Tydfil. The site includes areas of tussocky grassland, woodland and scrub. The woodland and scrub habitats extend beyond the boundaries of the site with extensive countryside to the south. The site has a slightly sloping southern aspect.

2.3 National Designations

The site, or any part of, is not covered by any statutory national or international conservation designation such as SAC, SPA or SSSI.

The site lies some 1.75km east of Cwm Gloa Glyndys and CWN Glo SSSI.

2.4 Local Designations

A large number of locally designated Sites of Interest to Nature Conservation (SINC), are located within a 2km radius of the site. These include:

Glynmil 500m west
Merthyr Common South 500m west
Merthyr Common Central 1km north east
Afon Taf 1km west
Rhydycar West 2km south west
Abercanaid Fields 2km south
Pentrebach Fields 1.75km south east
Pentrebach Tip 1.75km south

3 Methodologies

The survey methodologies as used to assess the site are outlined below. These are accepted by both local authority and conservation bodies as the standard ecological assessment methodologies.

The survey was undertaken within the site boundaries as supplied by Persimmon Homes East Wales.

3.1 Survey Dates and Personnel

The survey was undertaken in January 2019 by Carmen Jones MSc MCIEEM Senior Ecological Consultant and Dyfrig Jones BSc Senior Ecological Consultant. Both highly experienced ecologists with extensive experience in both ecological assessment and species specific issues.

3.2 Extended Phase I Ecological Assessment

The walkover survey consists of an assessment of the habitats present and was undertaken following the methodology as set out in the Handbook for Phase I Habitat Survey and extended to cover faunal species and their habitats according to the Chartered Institute of Ecology and Environmental Management (2016) Guidelines for Ecological Impact Assessment. CIEEM. Identified habitats were mapped using Pear Technology PT- Mapper Software and target notes (TN) taken where appropriate for any additional features noted. The habitats mapped and target note locations are shown in Appendix II.

In addition, as part of the extended phase I survey, a record was made of all mammals, birds, amphibian, reptile and invertebrate fauna for which a sighting or evidence of activity was observed as well as the identification of habitats present considered suitable to support both internationally and nationally protected species, or any species considered to be rare or of local significance.

3.3 Data Search

A desk top data search was undertaken for any records of species and/or habitats within the survey boundary. The data search was also extended to include a search for records within a 1.5 km radius of the survey centre of species or habitats, including protected and designated sites, which could be affected by the proposals for the site (Appendix III).

The data search included a search of records as held by the National Biodiversity Network online Gateway and a full data search undertaken by the South East Wales Biodiversity Record Centre (SEWBRc) Reference NO 0189-398.

3.4 Survey Limitations

The Phase I methodology is not intended to produce comprehensive species lists of fauna and flora and therefore the species lists should be considered representative but not totally inclusive. In particular mammal, invertebrate and bird species are likely to be under recorded during a single walkover survey.

The Phase I Survey/preliminary ecological assessment was undertaken in January which lies outside the optimum period for the identification of plant species. However based on the habitats present the results of the extended Phase I/Preliminary Ecological Assessment is considered an accurate reflection of habitat types present within the site boundary.

The Phase I Habitat Survey does not set out to identify all non-native or native invasive plant species such as Japanese Knotweed. These species may be recorded during the course of the survey; however the absence of records for such species should not be taken as a statement that such species are not present within the survey area. If the presence of such species is of primary significance for any future use of the site then further detailed vegetation surveys to identify and map any such plants should be undertaken.

4 Results Extended Phase I Survey

4.1 Habitats

The large site provides a mixed mosaic of habitats including unimproved grassland, broadleaf woodland and areas of dense scrub. Dry ditches are also present notably along the western side of the site.

4.1.1 Unimproved Grass

Areas of unimproved grassland represent the dominant habitat type across the main body of the site. The grasslands can be divided into two separate areas.

Area (1)

The grasslands have a dense tussocky sward reaching a height of between 10cm-25cm in height. All of the grassland areas are abandoned and have remained unmanaged for a number of years. The grasslands are currently used as informal recreation areas and are frequented by dog walkers with evidence of use by off road motorcycles also present. The swards have been assessed as representing a species poor NVC MG6 grassland or sub community thereof. Ant hills are a common feature of the grasslands indicating a lack of agricultural management or ground disturbance for a significant number of years.

Grass species recorded within include yorkshire fog (*Holcus lanatus*), false oat (*Arrhenatherum elatius*), cocksfoot (*Dactylis glomerata*), tufted hair grass (*Deschampsia cespitosa*), sheeps fescue (*Festuca ovina*), crested dogs tail (*Cynosurus cristatus*), sweet vernal (*Anthoxanthum odoratum*), perennial rye (*Lolium perenne*), red fescue (*Festuca rubra*), creeping bent (*Agrostis stolonifera*), common bent (*Agrostis tenuis*), rough meadow (*Poa trivialis*), red fescue (*Festuca rubra*) and annual meadow (*Poa annua*). Other species recorded include remote sedge (*Carex remota*), common sedge (*Carex nigra*), common dock (*Rumex obtusifolius*), greater willowherb (*Epilobium hirsutum*), soft rush (*Juncus effusus*), hard rush (*Juncus inflexus*), red clover (*Trifolium pratense*), white clover (*Trifolium repens*), creeping buttercup (*Ranunculus repens*), meadow buttercup (*Ranunculus acris*), creeping thistle (*Cirsium arvense*), meadow thistle (*Cirsium dissectum*), field wood rush (*Luzula campestris*), common sorrel (*Rumex acetosa*), sheeps sorrel (*Rumex acetosella*), dandelion (*Taraxacum sect-ruderalia*), hawkbit (*Leontodon* sp), tufted vetch (*Vicia sativa*), common vetch (*Vicia cracca*), shepherds purse (*Capsella bursa-pastoris*), common mouse ear (*Cerastium fontanum*), silverweed (*Potentilla anserina*), tormentil (*Potentilla erecta*), major plantain (*Plantago major*), ribwort plantain (*Plantago lanceolata*), mayweed, and common knapweed (*Centaurea nigra*), and teasel (*Dipsacus fullonum*).



Plate 1 Grassland Area (1)

Area (2)

Tussocky grassland with sward height of between 10-25cm. The species composition of the grassland area is similar to Area (1) with an increased percentage of hard and soft rush reflecting the wetter nature of the grassland. This area has a south westerly slope with wetter areas located at the bottom of the grassland. Low growing bramble has encroached into some areas of the grassland.



Plate 2 grassland Area (2)

4.1.2 Amenity Grassland

Two areas of amenity grassland lie within the site boundary. These include a small area of verge with associated planted trees adjacent to Aneurin Crescent and a larger area encompassing a children's play area at the north eastern corner of the site off Elm Tree Grove.

These areas of grassland are intensively managed by mowing during summer months and as a result have a low sward height. The dominant species present include perennial rye, red fescue, annual meadow grass, timothy, sheeps fescue and common bent. Other species are confined to those able to tolerate the intensive effects of mowing such as daisy and meadow buttercup.



Plate 3 Amenity Grassland (1)



Plate 4 Amenity Grassland (2)

4.1.3 Broadleaf Woodland

Broadleaf woodland in the form of young planted woodlands occur around the periphery of the site. These woodlands are of a single cohort but vary in species composition and extent of ground and field flora. The plantation woodlands form a buffer between the open grasslands and adjacent housing developments.

Woodland W1

Area of immature broadleaf woodland. Species present include ash (*Fraxinus excelsior*), oak (*Quercus rober*), silver birch (*Betula pendula*), hairy birch (*Betula hirsutum*), cherry (*Prunus padus*), spindle (*Euonymus europaea*), dogwood (*Cornus sanguinea*), grey willow (*Salix cinerea*), goat willow (*Salix caprea*), and alder (*Alnus glutinosa*). Occasional individual Corsican pine (*Pinus nigra*) and European Larch (*Larix decidua*) are also present.

Both field and ground layers are poor and dominated by low growing bramble (*Rubus sp*), bracken (*Pteridium aquilinum*), nettle (*Urtica dioica*), and ivy (*Hedera helix*). Moss species are common in more open areas.



Plate 5 woodland W1

Woodland W2

Immature planted broadleaf woodland. Species present include ash, oak, silver birch, cherry, goat willow, alder, and holly (*Ilex aquifolium*). Gorse (*Ulex europea*) is present as a field layer within the some sections of woodland.

Both field and ground layers are impoverished with large areas of bare earth with leaf litter and ivy cover.



Plate 6 woodland W2

Woodland W3

Immature woodland with a similar species composition to W1. Occasional stands of non-native *Leylandii* and individual Sitka spruce trees are also present within the woodland.

Both field and ground layers are impoverished with low growing bramble the dominant field layer species. The ground layer comprises a mix of bare earth, leaf litter and ivy cover.

Woodland W4

Immature broadleaf woodland Species composition that of W1 with occasional Corsican pine and European larch also present. Low growing bramble and gorse are the dominant species within the field layer. The ground flora is poor and dominated by ivy with large areas of leaf litter and moss.



Plate 7 woodland W4

Woodland W5

Immature broadleaf woodland with a mix of dense scrub. Species present include ash oak silver birch, hairy birch, cherry, spindle, dogwood, grey willow, goat willow, and alder. Other species present include dog rose (*Rosa canina*), Corsican pine, gorse, and European larch. Holly occurs frequently throughout the woodland.

The ground and field layers are general poor with low growing bramble and gorse dominating the field layer and large areas of leaf litter occurring throughout the ground layer.



Plate 8 woodland W5

4.1.4 Scrub

Scrub is a common feature of the peripheral site habitats.

Scrub 1

Area of dense scrub with a mosaic of more open grassland areas located along the western boundary of the site. Dominant species include gorse, bramble, dog rose, field rose (*Rosa arvensis*) and ash saplings with a mix of tall herbs including greater willowherb and stinging nettle.



Plate 9 scrub area 1

Scrub 2

Area of dense bramble scrub located at the north western corner of the site. Other species present include occasional gorse, goat willow, grey willow non-native privet.



Plate 10 scrub area 2

Scrub 3

Large area of dense scrub with a mix of bramble with occasional gorse, hawthorn, dog rose, and willow species. The scrub area forms a boundary between woodland W5 and the adjacent track and housing development.



Plate 11 scrub area 3

4.1.5 Dry Ditch

Two drainage ditches run through the western side of the site. Both ditches are culverted in places. At the time of survey both ditches were dry with no in channel or aquatic vegetation present. Vegetation on both banks is dominated by common grass species typical of the surrounding grasslands, silverweed and scattered scrub along some of the bank tops.



Plate 12 ditch (2)

4.1.6 Non Native

Stands of highly invasive Japanese Knotweed (*Fallopia japonica*) were recorded within the site boundary and immediately adjacent areas along the eastern boundary (TN3). The knotweed was generally confined to the woodland and scrub areas and was not recorded within the open grassland.



Plate 13 stand of non –native Japanese Knotweed

Table 1 showing target notes and feature descriptions as shown on map (appendix II)

Target Note	Description
TN1	Group of immature trees located within amenity grassland area, oak, ash birch, maple
TN2	Patch of dense gorse scrub, good reptile habitat
TN3	Large stand of Invasive Japanese Knotweed

4.2 Data Search Results

4.2.1 Designations

No part of the site or immediately adjacent habitat is afforded a statutory designation as a result of its importance to nature conservation. No national designated sites lie within a 2km radius of the site.

A large number of locally designated sites of Interest to Nature Conservation Reserves lie within a 2km radius of the site.

4.2.1 Protected Species

No records were found relating to WCA Protected Species within the survey area or immediately adjacent habitats.

Records were found confirming the presence, or historic presence, of protected and priority species within a 2km radius of the site (Appendix III). Records for a WCA Schedule 1 protected species within 2km of the site included:

Common Pipistrelle (Roost) within 400m
Great Crested Newt within 800m
Red Kite within 600m
Peregrine Falcon within 600m
Goshawk within 600m
Otter within 900m
Badger within 1km
Little Ringed Plover within 2km

A large number of records were also found relating to species listed in the Environment (Wales) Act 2016 as a Species of Principle Importance for maintaining and enhancing Biodiversity in relation to Wales (Interim List) including birds, invertebrates, mammals, reptile and amphibian species.

5 Ecological Evaluation

5.1 Habitats

For reporting purposes the ecological value of a habitat/site is based upon the following criteria:

- Currently supports, or has the potential to support protected, nationally or locally scarce species
- Supports a species listed in the Environment (Wales) Act 2016 as a Species of Principle Importance for maintaining and enhancing Biodiversity in relation to Wales (Interim List)
- Is listed in the Environment (Wales) Act 2016 as a Habitat of Principle Importance for maintaining and enhancing Biodiversity in relation to Wales (Interim List)
- Habitat has a high intrinsic value supporting a diverse range of species
- Is a UK BAP Habitat
- Local BAP Habitats with an ecological interest or cover a significant area of the site
- Natural habitats located within built up and/or urban areas

5.1.1 Unimproved Grasslands

Unimproved neutral, acidic and calcareous grasslands can be very diverse and as such these grassland types are listed in the Environment (Wales) Act 2016 as a Habitat of Principle Importance for maintaining and enhancing Biodiversity in relation to Wales (Interim List)

The grasslands within the survey area have relatively low diversity of grasses and herbs and represent a mosaic of neutral and acidic plant communities. Those present are generally species common to the surrounding areas. The wetter, low lying areas of the site have a higher percentage of *Juncus* species than those found in the higher and drier areas of the site. Significant numbers of ant hills are present within the site indicating that the grasslands have not been subject to ploughing or ground disturbance for a considerable period although evidence of historic earth movements is present.

No rare or uncommon species were recorded within any of the grassland communities. The grasslands do not represent species rich swards often associated with unimproved grasslands.

The grasslands are considered to have a moderate ecological value at a site level based on the degree of floristic diversity and relatively common nature of the communities present within the general area. The grassland communities are considered to have a moderate to low ecological value at a local and county level.

5.1.2 Broadleaf Woodland

Five areas of immature deciduous woodland are located within the site boundary. Broadleaf semi natural woodland is listed as a Habitat of Principle Importance for maintaining and enhancing Biodiversity in relation to Wales and is a UK BAP habitat. Broadleaf woodland is recognised as having significant value to a range of invertebrate and small mammal species. All trees have a value to both feeding and nesting birds as well as a wide range of invertebrate species.

The woodlands within the site are primarily located around the periphery of the site and represent young plantation woodlands created as a buffer to the adjacent housing developments. All woodland blocks have poor field and ground layers. None of the trees within the woodland blocks are mature and none show any characteristics associated with the potential for use by roosting bats. The woodlands taken as a single habitat are likely to support a wide range of common bird species both resident and migrant species. The woodlands also affords potential habitats for small mammals such as hedgehog, reptile species and the terrestrial life stages of amphibians such as frogs and toads.

The woodlands are considered to be of a moderate ecological value at a site level based on the age and composition of the woodlands.

5.1.3 Scrub

Bramble and gorse scrub is a common feature around the periphery of the site with occasional gorse patches also extending into the open grassland. The dense scrub is likely to be used as a food source by wintering birds and as a nesting site for common bird species. The scrub also offers potential habitat for small mammals such as hedgehog and as natural refugia and hibernation sites for reptile species, the terrestrial life stages of amphibian species, as well as potentially supporting a number of common invertebrates. Based on its potential value birds, invertebrates and reptiles the scrub is considered to be of moderate ecological value at a site level.

5.1.4 Watercourse/Ditch

The ditch system is generally dry although the presence of culverts and drains suggests that these ditches do carry water during periods of heavy rainfall. In general terms the dry ditch is considered to be of limited ecological value, however these ephemeral water bodies do have the potential to be used by common amphibian species such as common frog if water is present during the breeding season. Although due to the limited time period over which water is likely to remain within the ditches their value to amphibians is considered very limited. The ditches are unsuitable for use by the WCA protected Great Crested Newt.

Overall the ditches and dry watercourses are considered to have a low ecological value at a site level.

5.2 Fauna

5.2.1 Mammals

5.2.1.1 Badger

No evidence of badger activity was recorded during the Phase I survey although records of a badger presence within 2km of the site were found during the data search. The woodland habitats present have limited ground and field vegetation making the concealment of a set difficult. No other habitats are present within the site suitable for use as an undisturbed set location. Based on the habitats present and the lack of obvious field signs it is considered unlikely that badger are present within the site or that badger use the site for foraging or commuting on a regular basis. It is considered highly unlikely that any future development of the site will have a significant impact on badger and no further survey work is necessary.

5.2.1.2 Bats

No structures suitable for use by roosting bats are present within the site boundary.

The trees recorded within the woodland blocks are relatively young and have been assessed as Category 3 Trees using the scoring system as per Bat Conservation Trust Guidelines for assessing suitability of trees for bats. These will be trees of an age and structure that makes them unsuitable for use by roosting bats. Due to the negligible potential for use by bats these trees do not require further survey work.

A large number of bat roosts, primarily those of pipistrelle species are known to be present within a 2km radius of the site including common pipistrelle roosts within 300m of the site boundary. Brown long eared bats are known to roost within 1km. Bats can and do travel considerable distances between roosting sites and feeding areas.

The location of the site adjacent to housing developments and with extensive areas of open countryside and mature broadleaf woodlands to the south means that there is the potential for the grassland and peripheral woodland blocks to be used as foraging areas and commuting routes.

Further work, in the form of a bat activity survey, will be required in order to ascertain the use being made of the grassland and woodland areas by bats to ensure that any important dark commuting corridors are retained following any future development of the site.

5.2.1.3 Dormouse

None of the woodlands within the site have the structure and species diversity associated with use by dormouse. No records of dormouse were found for any location within a 1.5km radius of the site boundary. Based on the habitats present and the data search results it is considered highly unlikely that dormouse are present within the site. It is also considered highly unlikely that future development of the site will have a negative impact on dormouse or affect the conservation status of the species within the local area.

5.2.1.4 Otter

Otter are present on the watercourses within a 1km radius of the site. None of the ditches present within the survey area are suitable for use by otter being generally dry and lacking bankside cover. As such it is considered unlikely that otter will regularly visit the site or use the dry ditches as regular commuting or foraging areas. As a result any proposed development of the site is unlikely to cause disturbance to otter at a local level or have an impact on the conservation status of the species. No further survey work regarding this species is considered necessary

5.3 Reptiles

All habitats within the site have a high potential for use by reptiles as foraging areas and afford excellent refuge areas including areas suitable for hibernation. These include the woodland, grasslands, dry channels and scrub. The peripheral areas of the bare sparse grassland has the potential for use as basking areas for reptiles. The extensive areas suitable for reptiles, combined with the potential for use by different reptile species, means that the full ecological value of the site with regard to reptiles can only be ascertained following a full reptile survey of the site. This should be undertaken using a recognised methodology and under suitable weather conditions.

Overall the site is considered to be of high potential value to reptiles.

5.4 Amphibians

At present all ditches are dry however in periods of heavy rainfall water may be retained within the ditches for a short period and under these occasional events they do have limited potential to be used as a breeding site for species such as common frog and small common newt species. The ditches are unsuitable for use by great crested newt, as a result it is considered highly unlikely that great crested newt are present within the site boundary.

The woodlands, grassland and scrub all provide potential refuge and hibernation sites for common amphibian species during their terrestrial life stages.

.Overall the site is considered to be of low to moderate ecological value with specific regard to amphibian species.

5.5 Birds

The woodlands, grassland and scrub affords excellent feeding opportunities for resident, summer migrant and winter migrant species. The site also offers potential nest sites for a wide range of bird species including those recorded during the walkover survey such as blackbird (*Turdus merula*), house sparrow (*Passer domesticus*), starling (*Sturnus vulgaris*), great tit (*Parus major*), long tailed tit (*Aegithalos caudatus*), blue tit (*Parus caeruleus*), chaffinch (*Fringilla coelebs*), wren (*Troglodytes troglodytes*), robin (*Erithacus rubecula*), song thrush (*Turdus philomelos*), wood pigeon (*Columba palumbus*), bullfinch (*Pyrrhula pyrrhula*), magpie (*Pica pica*), and carrion crow (*Corvus corone*).

The nature and location of the site is such that it is unlikely to support any Schedule 1 bird species. A number of Schedule I species have been recorded within 500m of the site including red kite (*Milvus milvus*), Goshawk (*Accipiter gentilis*), and Peregrine Falcon (*Falco peregrinus*), however no suitable breeding habitat for any of these species is present within the site boundary. Little ringed plover (*Charadrius dubius*) have been recorded within 2km of the site however the lack of suitable habitat and the degree of disturbance by dog walkers and other casual recreational use, as observed during the walkover survey, precludes the use of the site by this sensitive species.

Overall the site is likely to be of moderate to high value to common bird species at a site and local level.

5.6 Invertebrates

The diversity and structure of the habitats present means that the site is likely to support a very wide range of invertebrate species. No records for any invertebrate species was found relating directly to the site. The timing of the Phase I survey/Preliminary ecological assessment (January) means that it has not been possible at this stage to ascertain the full value of the site to invertebrate species.

Brownfield sites often support important, uncommon or rare invertebrate species. In order to fully ascertain the ecological value of the site with regard to macro invertebrates further survey work will be required. Such survey work will need to be undertaken within the appropriate survey season (spring/summer).

Overall the site is considered to be of moderate value to invertebrates at both a site and local level. Although the full ecological value will depend on the results of the invertebrate survey.

The site is not covered by any National or International designation with regard to its importance for wildlife conservation.

The site lies within 2km of eight (8) locally designated sites of interest to nature conservation. None of these sites lie immediately adjacent to the propose development site.

The grassland areas have been assessed as being of moderate ecological value and while variable in species composition and sward type do not represent swards of high floristic diversity. The grasslands are typical of other grasslands within the general area including grasslands reinstated following reclamation of former industrial land. The grasslands do not represent grasslands of high conservation value.

The woodland blocks have been assessed for their potential importance to bat species. No trees suitable for use by roosting bats are present within the site boundary. All trees have been assessed as category (3) trees meaning they have negligible value to bats. The site has direct links with adjacent buildings and extensive open countryside to the south all of which afford opportunities for bats. Further survey will be required to ascertain the use being made of the site by foraging and commuting bats.

The grasslands, scrub, and woodlands have been identified as having a high potential to support populations of reptile species. The range of habitats present means the site has the potential to support a number of different species and affords habitats suitable for foraging, basking and hibernation. A full survey of the site in order to ascertain the full importance of the site to reptiles will be required.

The ditch has been identified as being of very limited potential value to common amphibians at a site level although its ephemeral nature may reduce its ecological value. No habitats suitable for use by the protected great crested newt are present within the site boundary.

Brown field sites are often important areas for invertebrate species and can support a wide range of common, uncommon and rare species. Further detailed survey work will be required before the full value of the site to invertebrate species can be fully ascertained.

The loss of trees, scrub and other habitats will lead to the loss of feeding and nesting areas for birds. Nesting birds are protected by law. Any clearance work must be undertaken outside the bird breeding season March-July inclusive or ecological advice sought and areas to be removed checked for nesting birds by an ecologist no earlier than 48 hours before removal works commence. If nesting birds are found then works must stop and no works on that area of hedgerow/habitat can be undertaken until all chicks have fledged and the nest abandoned.

No evidence of badger was found within any area of the site and no records for an historic badger presence was found therefore badger are unlikely to be affected by any future development.

No habitats suitable for use by hazel dormouse was found within the survey boundary. The site also lacks the degree of connectivity with high quality habitats associated with use by dormouse.

In conclusion a number of further ecological surveys will be required before the full ecological value of the site can be ascertained. The grassland areas and the large areas of bare ground are likely to be the most suitable areas for development.

7 Recommendations

The extended phase I survey/preliminary ecological assessment identified a number of features and habitats present that may support both European and UK protected, rare or uncommon species or habitats and species that require consideration as part of any future planning application. In order that a full understanding of the ecological importance of the site can be fully understood further species specific survey work will be required.

Details of required surveys and optimal survey period are given in table 2 below.

Table 2 Survey Requirements Twynyrodyn Site Optimal Survey Period and Constraints

Survey Required	Reason	Timing
Reptiles- Habitats suitable for a number of different reptile species have been identified within the survey boundary. It is recommended that a survey of the site is undertaken using a recognised methodology in order to establish what use is -being made of the site by reptile.	This will allow for an appropriate methodology to be produced where required, to ensure the protection of reptiles prior to, during and after construction.	April-October (weather dependant survey may be limited in August if temperatures are very high)
Invertebrates- Habitats for wide range of invertebrate species has been identified within the site. Data search results also show the presence within the local area of uncommon and rare species. A survey of macro-invertebrates should be undertaken across the site during the appropriate survey season.	To allow for the identification of rare, or uncommon species and allow for a full understanding of the ecological importance of the site to invertebrate species and inform the need for appropriate mitigation/habitat creation within the site post development	Spring/Summer
Bat Activity- Habitat suitable for use by foraging and commuting bats have been identified within the site. The site has links between built up areas with potential for use by roosting bats and extensive countryside. Data search results show the presence of bats within 200m of the site boundary. A Bat Activity Survey should be undertaken across the site during the appropriate survey season.	To ensure that all important commuting routes are identified and important dark corridors retained following development	May-September Inclusive

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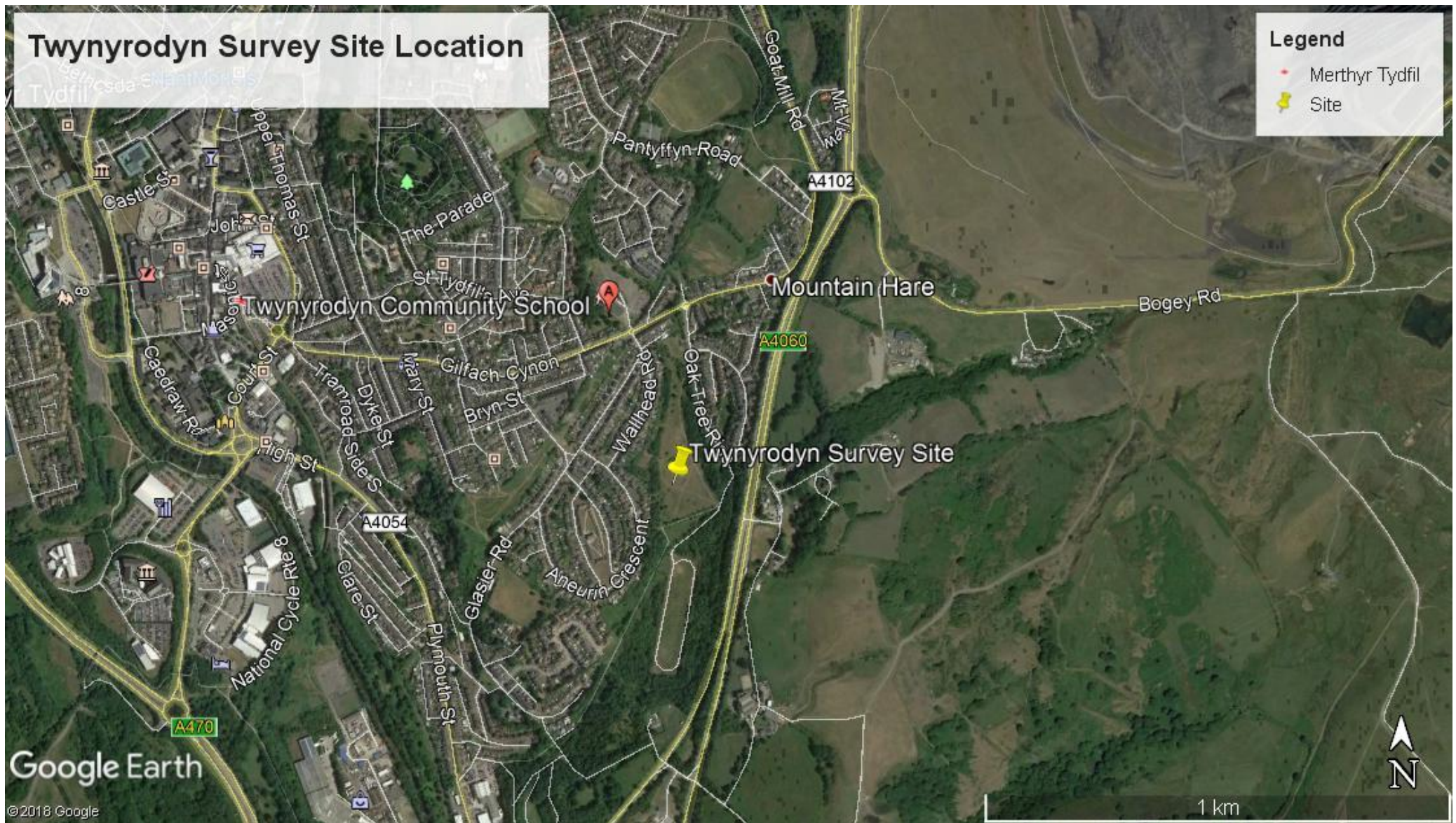
South East Wales Biodiversity Records Centre (SEWBReC) Data search results October 2018 Twynyrodyn for TerraQua Ecological Services Ltd/Persimmon Homes **REF No 0189-398**

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Appendix I

Location of Twynyrodyn Survey Area



Aerial View Showing Location of Twynrodyn Survey Site (Image Google Earth 2018)

Appendix II

Map Showing Habitats Present and Targeted Ecological Features

TerrAqua Ecological Services Ltd

Land at Twynyrodyn, Merthyr Tydfil
for Persimmon Homes East Wales

Preliminary Ecological Assessment

SCALE : 1 : 2500 @ A4 DATE : 25/01/2019

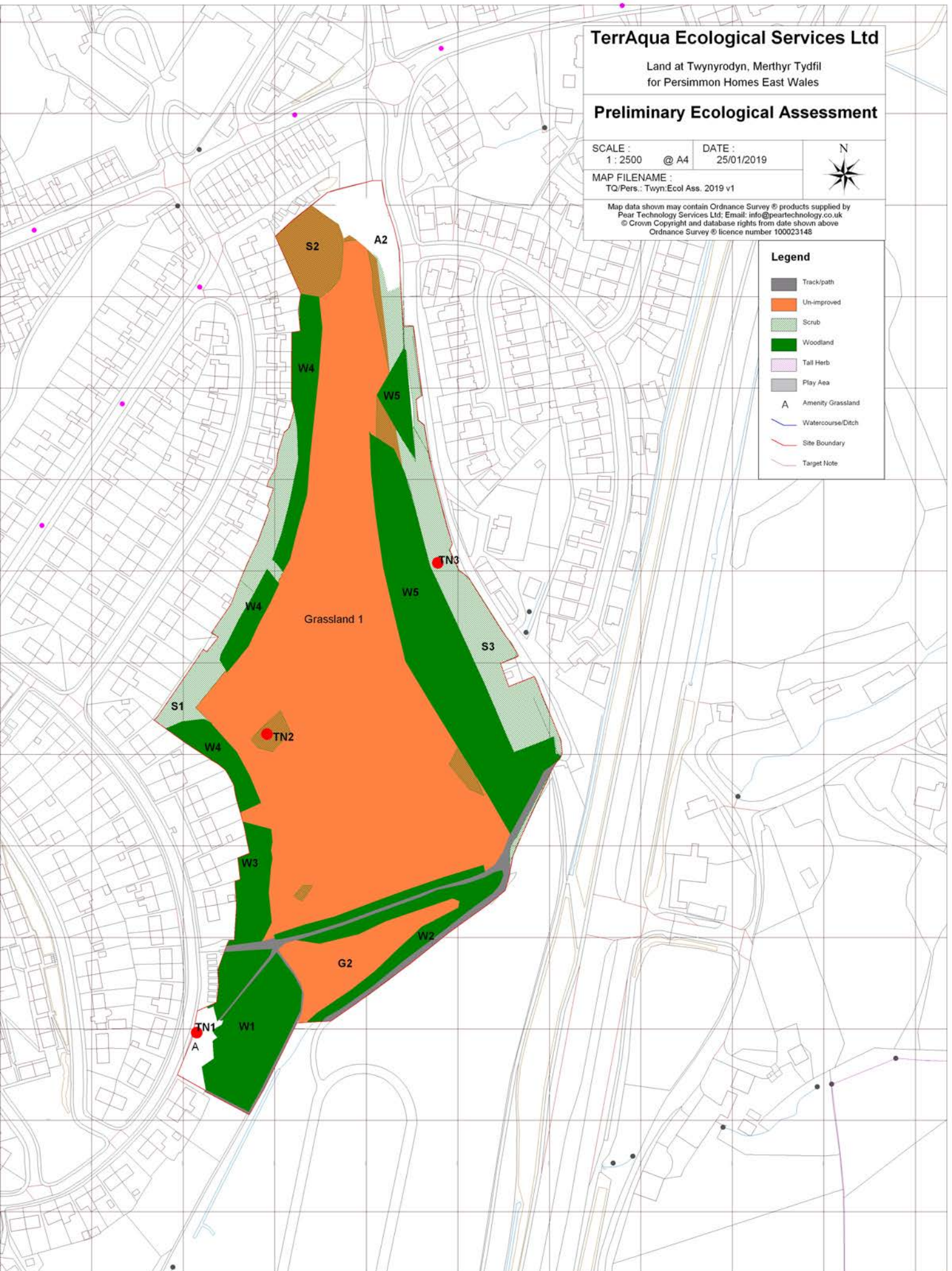
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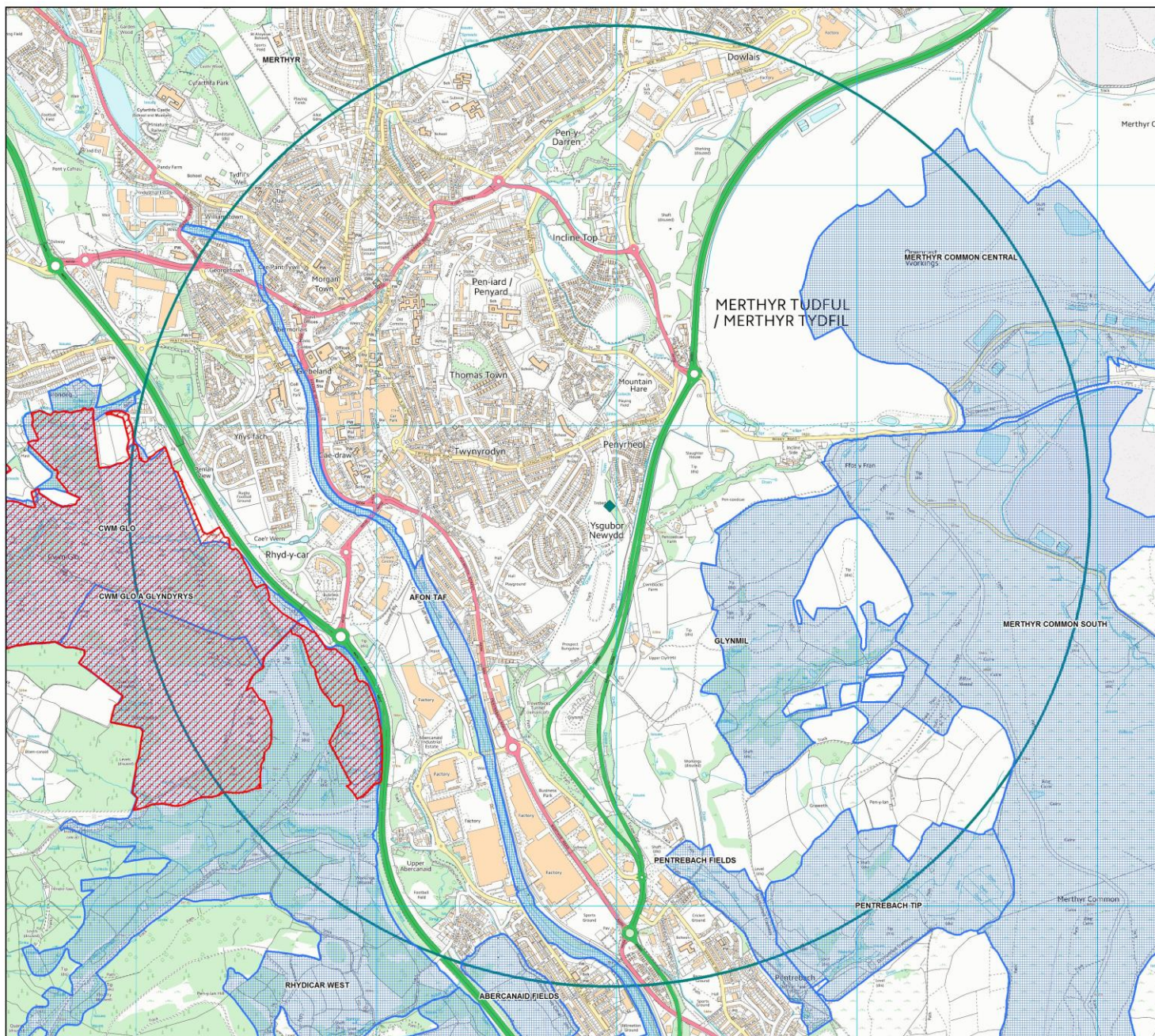
Legend

- Track/path
- Un-improved
- Scrub
- Woodland
- Tall Herb
- Play Area
- A Amenity Grassland
- Watercourse/Ditch
- Site Boundary
- Target Note



Appendix III

Map Showing Data Search Results Protected Sites and Protected Species Distribution (SEWBRc Data)



BIODIVERSITY INFORMATION SEARCH (SPECIES AND DESIGNATED SITES):

TWYNRODYN
SO0596905665

- ◆ Centre of Search Area
- 2km Search Buffer
- Site of Special Scientific Interest
- Site of Importance for Nature Conservation
- Unitary Authority Boundary

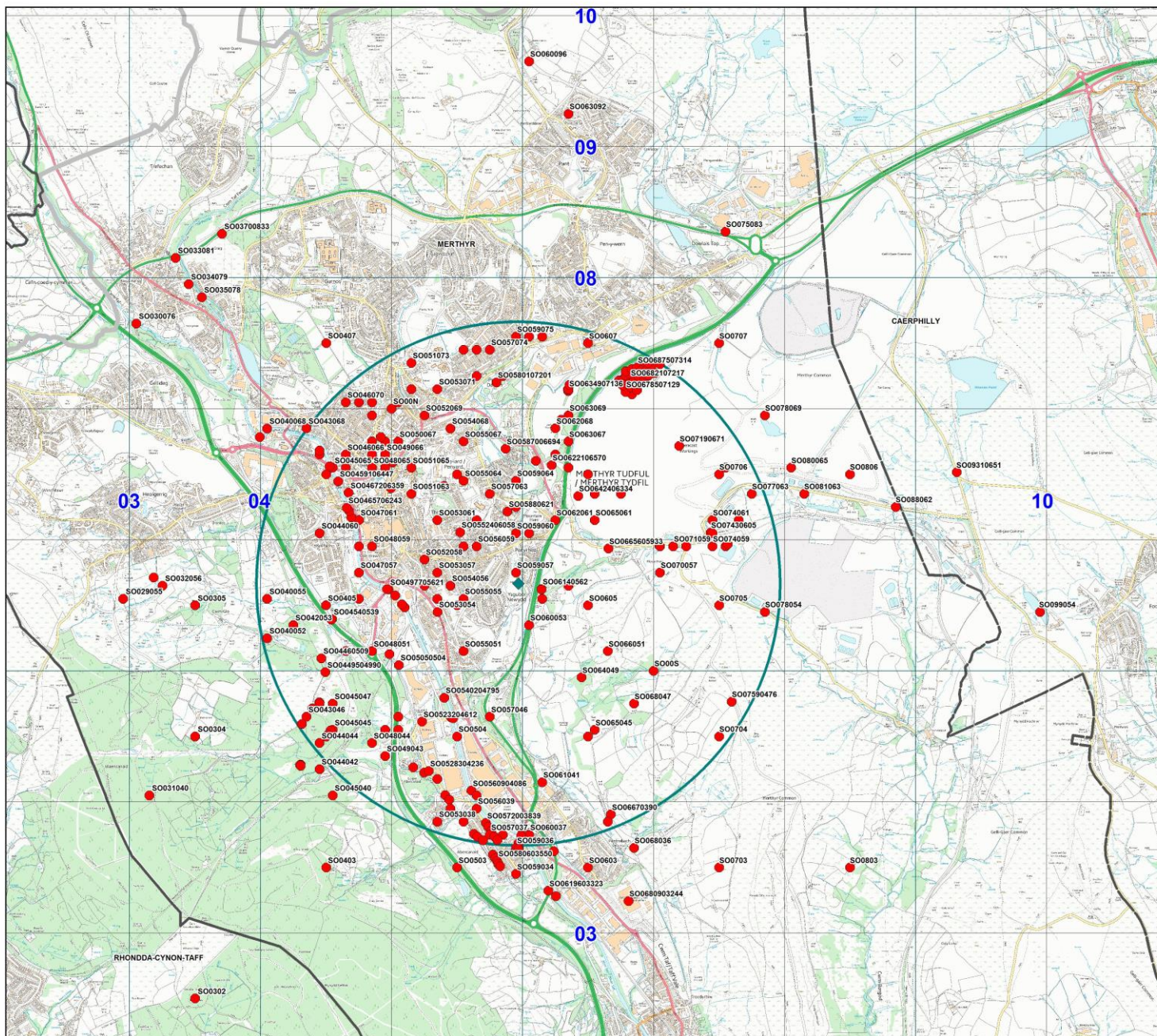
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TerrAqua by



SOUTH EAST WALES BIODIVERSITY RECORDS CENTRE
CANOLFAN GOPNODION BIODIMRYWAETH DE DDWYRAIN CYMRU



BIODIVERSITY INFORMATION SEARCH (SPECIES AND DESIGNATED SITES):

**TWYNRODYN
SO0596905665**

- Centre of Search Area
- 2km Search Buffer
- Priority and Protected Species
- Unitary Authority Boundary

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