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Working for the Client - Working with Wildlife

Dragon Parc, Abercanaid, Merthyr Tydfil, CF48 1YT

AEUK 1360

Ecological Site Summary 2022

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6th December 2022



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Project: Ecological lighting assessment

1. Introduction

The site Dragon Parc is located at Graig Road, Troed-y-rhiw, Abercanaid, Merthyr Tydfil CF48 1YT and is centred on National Grid reference SO054042 (What3words fever.onions.advice). The site is a former industrial site which has undergone demolition leaving building rubble and access roads with a grassed swale and vegetated boundary on the west side. The site runs parallel to the River Taff on the east boundary and the river sits over 10m below the height of the site and has a mixture of native and non native species along the bankside.

The site has been subject to a number of ecological surveys over the past 7 years during different stages of the site evolution and the site has continued to remain ecologically poor in terms of habitats and species composition.

2. Site ecological surveys relevant to planning submission

A PEA was previously undertaken for the site by Ecological Services Ltd in August 2020 in relation to a previous planning application for drainage swale and discharge point into the River Taff. This survey followed a suite of surveys by RPS in 2016 which included: Phase 1 habitat survey, HSI survey for newts/amphibians, Botanical survey and a bat survey concluding in September 2016. More recent surveys in relation to this application are summarised below. Please refer to specific documents for full details of survey, survey methods, results and recommendations.

[Alder Ecology UK Ltd- Ecological lighting assessment November 2022](#)

Summary of findings- The survey assessed the site to understand the baseline lux levels for the site taking into account off site light spill and light trespass. The survey had a minimum site lux level of 0.23 lux and an upper lux level of 21.8 lux and that the site predominantly sits in zones 3 and 4 according to The Society of Light & Lighting guidance documents. The areas of lower lux correspond to areas more regularly used by bat species from the surveys previously conducted on site.

[Ecological Services Ltd - Bat survey report September 2022.](#)

Summary of findings- The survey found that a total of five bat species (common and soprano pipistrelle, Noctule, Myotis sp and Brown long eared bat) were regularly using the site for foraging and a sixth species Lesser horseshoe bat was suspected (based on sonogram results) to be using the site, but this was not further confirmed. There are three main areas of

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the site regularly used by bat species; east corridor close to the River Taff, west boundary close to Wildwood [road], and the north-west boundary.

[Ecological Services Ltd – NVC and reptile survey March 2022.](#)

Summary of findings- A full reptile presence and absence survey was conducted for the site and reptiles were found to be absent over the survey period. The reptile survey recommended enhancements for future use of the site by reptiles.

The NVC survey found two areas of the site (Fen meadow habitat and rush pasture habitat) to have a good composition of floristic species and were assessed to be of sufficient quality to meet the SINC criteria. The survey recommended retaining habitat areas if possible or translocate on site.

3. The site as it stands ecologically

- The site contains no bat roosts but is used by 5/6 species of foraging bats
- The site recorded reptiles to be absent from the site
- The site recorded Great Crested Newts to be absent from the site
- The site has records of Otters using the River Taff in close proximity to the site
- The site has no records of bird species nesting on areas of the site to be impacted by the proposed scheme although evidence of nesting birds has been observed in the boundary vegetation
- The site has no records of protected or notable vascular plant species or species as of principle importance for nature conservation listed under section 7 list of The Environment (Wales) act 2016
- The site inside the redline boundary contains no habitats as of principle importance for nature conservation listed under section 7 list of The Environment (Wales) act 2016
- The site has a recorded minimum baseline lux level of 0.23 lux and a maximum recorded level of 21.8 lux
- There are records of two alien invasive species recorded on site Japanese Knotweed and Cotoneaster bulatus both need to be removed from site

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4. Site proposed mitigation and enhancements

The site 'Landscape Biodiversity and amenity strategy'- Catherine Etchell Associates 2022 details measures to be employed on site and is the main document for reference and includes the following proposals:

- Retain vegetation in riparian corridor except non-native alien invasive species
- Use existing top soil to re-seed areas on site
- Create a pollination corridor east, west across the site
- Translocate rush pasture and fen meadow species into swale area and area in south of the site
- Pond retained located on swale and enhanced
- Planting of high percentage native vegetation
- Reinforce existing vegetation in south and boundaries
- SUDs areas contain both native vegetation and translocated species
- Advocate low level lighting along east boundary
- Create site links east -west and south –north for species movement

5. Other ecological mitigation and enhancement measures as proposed

These measures are measures that have been proposed within various reports for the site and presented as a simple list but referring to existing produced documents will provide full details.

- Retain or translocate areas of marshy grassland (Rush pasture and fen meadow)
- Use native species when planting
- Implement a sensitive lighting strategy for the site
- Provide integrated bird and bat boxes in selected areas on site
- Strengthen boundary vegetation corridors
- Do not directly illuminate wildlife movement corridors above baseline levels on east and west boundaries
- Provide a vegetated buffer between the site and River Taff
- Use ecological baseline levels to provide guidance to site lighting scheme
- Remove non-native invasive plant species from the site
- Provide landscape scheme to provide opportunities for reptile species on site

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6. Appendix A- Ecological Services Ltd - Bat survey report September 2022.

See attached



Bat Survey Report



Project: Land at Dragon Parc, Merthyr Tydfil

Instructed by: Davies Homes Ltd

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Appendix

- Survey Route & Anabat Locations**
- Static Bat Monitoring Data**

1. Introduction

The applicant is seeking permission to create a residential development within a parcel of land at Dragon Parc, Merthyr Tydfil centred at SO 05436 04336. The proposed development site was previously a site of a Hoover Factory within Merthyr Tydfil. The land has been cleared of the majority of the buildings leaving behind foundations and rubble piles across the majority of the site.

A preliminary ecological appraisal (PEA) of the land within the proposed development boundary was completed on the 13th August 2019. The potential for the habitats across the site to be used by bats for foraging and commuting purposes was highlighted during the site visit. As such bat survey work has been recommended and undertaken to inform the development process.

1.1 Site Description

The land within the proposed site boundary is fairly flat with a lower level plateau present to the southern half of the site. The site measures approximately 8.2ha in size and was formerly used for light industrial purposes with a large warehouse, smaller ancillary buildings and car parking present. The site has been cleared of the majority of the buildings leaving behind foundations and rubble piles across the site. A tree line and areas of semi improved grassland are present along the western site boundary. An area of SINC quality Marshy grassland, neutral grassland and scrub is present to the north of the site

The site lies within the settlement of Abercainaid to the south of Merthyr Tydfil directly adjacent to the River Taff. The site is immediately surrounded by light industrial units to the north and west with residential housing present to the south of the site. A small area of woodland and the Taff Cycle Trail lie to the south west of the site

1.2 Survey Constraints

The survey work was undertaken during suitable weather conditions and within the bat active period. The bat activity surveys and static monitoring were all completed at a suitable time of year and weather conditions.

The majority of the proposed development site is hardstanding and rubble which provides little habitat for bat use. The tree lines, narrow band of woodland and grassland habitats along the north and western boundary are suitable bat foraging habitat. The adjacent River Taff which runs along the eastern edge of the site is highly suitable for commuting use by bats. On balance the land within the proposed development site is considered to have

moderate potential to be used by bats. In line with the BCT Survey Guidelines (2016) 1 period of survey work per month between April to October has been completed.

1.3 Surveyor Experience

Aislinn Harris is a full member of Chartered Institute of Ecology and Environmental Management (CIEEM). Aislinn is an ecologist with 12 years experience undertaking a wide range of flora and fauna surveys. Aislinn is also a licenced bat ecologist (NRW S085699-1). Aislinn has undertaken all the data analysis as part of the bat survey work.

Scott Watkins is an ecologist with at least four years experience. Scott has worked for Ecological Services Ltd completing a range of reptile surveys and providing support on bat activity surveys throughout the survey season. Scott completed all the walked bat transect surveys with occasional support from Aislinn Harris.

2. Legislation

All British bats are a European protected species and are protected under the Conservation of Habitats and Species Regulations 2017. In summary, they are protected from:

- Deliberate capture, killing and injuring,
- Deliberate disturbance of a breeding site or resting place,
- Damage or destruction of a breeding site or resting place.

Schedule 5 of The Wildlife and Countryside Act (1981) also protects all species of British bat and their roosting locations. British bats are protected from intentional or reckless disturbance and or obstruction of their roosting places. Barbastelle, beechstein, noctule, brown long eared, common pipistrelle, soprano pipistrelle, greater horseshoe and lesser horseshoe bats are also listed in section 7 of the Environment (Wales) Act 2016 which makes them a key species to sustain and improve biodiversity.

3. Bat Survey Results

Seven periods of bat surveying have been completed within the proposed development site boundary. Each period of bat surveying included a walked bat transect survey following a defined route and five nights of static bat monitoring.

For the transect surveys one walked route was followed to ensure all areas of the site were covered by surveyors. For each walked transect survey a surveyor walked a defined route around the site during each survey visit at least twice. The transect routes and stopping points are shown in Appendix 1. The surveyor stopped at each stopping point for 5 minutes to record and observe bat activity. All bat calls were recorded using Anabat and EM Touch bat detectors and analysed using Analook and Kaleidoscope software.

For the static monitoring Anabat expresses were used at the same location during each survey period to ensure comparable data was collected. The location of each static detector was chosen based on habitat likely to be lost during development and edge habitats bats were likely to use for commuting / foraging purposes. Four detectors were deployed during July and August 2021. The approximate location of each detectors is shown on **Appendix 1**. However during October 2021 the tree used to secure Anabat 3 was removed as part of the drainage improvement works for the site. Only 3 Anabats were used for the remainder of the survey effort within the site in order to have comparable data.

4.1 Bat Transect Surveys

1) Date - 21st April 2022

Weather Conditions - 15°C, 25% cloud cover, dry, slight breeze

Surveyors Present - Hannah Evans, Tyrone Evans

Sunset Time - 20:21

The first bat recorded was a Noctule bat flying heard but not seen at stopping point 2 at 20:39. At 20:45 Common and Soprano pipistrelle bats were observed flying along the tree line by stopping point 2. At stopping point 3 Noctule, Common and Soprano Pipistrelle bat were recorded and pipistrelle bats were observed foraging around the area of woodland adjacent. Between stopping point 4 and 5 Common and Soprano Pipistrelle bats were recorded commuting and foraging along the river. At stopping point 6 a common pipistrelle bat was recorded but not observed.

Activity reduced on the second lap of the transect route. Common and Soprano Pipistrelle bats were recorded but not observed. The last bat call recorded was a Noctule bat at 21:45

2) Date- 19th May 2022

Weather Conditions - 11°C, 90% cloud cover, dry.

Surveyors Present - Hannah Evans, Tyrone Evans

Sunset Time - 21:06

The first bat recorded was a Noctule bat at 21:16 observed flying overhead at stopping point 2. Common and Soprano pipistrelle bats were observed commuting and foraging while at stopping point 4. Common pipistrelle bats were observed and recorded commuting along the tree line at stopping point 6 at 21:49. The last bat recorded but not seen was a common pipistrelle bats at 22:37

3) Date- 20th June 2022

Weather Conditions - 14°C, 25% cloud, dry.

Surveyors Present - Hannah Evans, Tyrone Evans

Sunset Time - 21:36

The first bat recorded but not seen was a Noctule at 21:38 at stopping point 1. A Soprano Pipistrelle bat was then observed foraging along the small woodland area by stopping point 3 at 21:51. A Noctule bat was recorded but not observed at 21:54 at stopping point 3. At stopping point 5 Common pipistrelle bats were observed foraging along the tree line and 3 Noctule calls were recorded. At stopping point 6 continuous Common pipistrelle foraging activity was observed along the tree line.

Common and Soprano pipistrelle bat calls were recorded fairly continuously but not observed for the duration of the survey until 23:15 when the survey ended.

4) Date- 29th July 2021

Weather Conditions - 14°C, 99% cloud cover, dry.

Surveyors Present - Hannah Evans, Tyrone Evans

Sunset Time - 21:07

A Soprano pipistrelle was recorded but not observed as soon as the survey commenced. A Noctule bat was observed flying overhead at stopping 1 at 21:10 northwards along the tree line. Walking from stopping point 1 to 2 the surveyors recorded but did not see Noctule bats.

At stopping point 2 a Soprano pipistrelle was observed flying along the tree line to the west at 21:21. A Common pipistrelle was observed flying across the centre of the development site and feeding around stopping point 3 at 21:25. A Noctule was observed flying from north to south across the centre of the site at 21:26. Between stopping point 3 and 4 a Soprano pipistrelle and a call indicative of Nathusius pipistrelle was recorded. At stopping point 5 Common and Soprano pipistrelle bats were recorded continuously foraging along the tree line adjacent to the river. At 21:40 at stopping point 6 another call indicative of a Nathusius pipistrelle bat was recorded.

During the second lap of the transect route light levels were becoming poor and visibility to directly observe bats reduced. Common and soprano pipistrelle bats were recorded fairly continuously but not directly observed for the remainder of the transect. The transect finished at 23:00.

5) Date- 24th August 2021

Weather Conditions - 17°C, 25% cloud, dry.

Surveyors Present - Hannah Evans, Tyrone Evans

Sunset Time - 20:18

A Soprano pipistrelle bat was recorded but not observed at stopping point 1 at 20:24. At 20:30 a Soprano pipistrelle bat was observed flying along the tree line on the western boundary of the site. At stopping point 3 a Common pipistrelle bat was observed foraging over the grassland in the centre of site for the duration of the stop. At least 2 Soprano pipistrelle bats were observed foraging along the river at stopping point 4 at 20:45. Between stopping point 5 and 6 a Noctule bat was recorded but not observed at 20:57. Common and soprano pipistrelle bats were also observed foraging at stopping point 5 and 6.

During the second lap of the transect route light levels were becoming poor and visibility to directly observe bats reduced. Common and soprano pipistrelle bats were recorded fairly continuously but not directly observed for the remainder of the transect. The transect finished at 22:10.

6) Date- 26th September 2021

Weather Conditions - 10°C, clear sky, dry.

Surveyors Present - Hannah Evans, Tyrone Evans

Sunset Time - 07:06

The first bat call recorded was at 06:11 and was a Common pipistrelle bat at stopping point 2. A Common pipistrelle bat was also recorded but not observed at 06:34 at stopping point

5. A Common pipistrelle was recorded but not observed at stopping point 1 at 06:47. A Common pipistrelle bat was observed flying south to north across the centre of the site at 07:03. The last bat recorded was a Common pipistrelle bat at 07:17 at stopping point 6. The bat was not observed. The transect survey finished at 07:20.

7) Date- 26th October 2021

Weather Conditions - 13°C, 100% cloud cover. Drizzle commenced at 18:23 but bat activity was still ongoing so survey continued.

Surveyors Present - Hannah Evans, Tyrone Evans

Sunset Time - 17:57

A Common pipistrelle bat was recorded but not observed at stopping point 1 at 18:01. A Soprano pipistrelle was observed foraging across the grassland adjacent to stopping point 2 at 18:13. Soprano pipistrelle bats were observed foraging along the river while walking between stopping point 4 and 5 at 18:26.

During the second lap of the transect route bat activity remained fairly constant. At 18:51 a Soprano pipistrelle was recorded but not observed at stopping point 2. At 18:57 a Noctule bat was recorded but not observed at stopping point 3. At 19:02 a Soprano pipistrelle was recorded but not observed at stopping point 5. The transect survey ended at 19:09.

4.2 Static Bat Surveys

Seven periods of static bat monitoring have been completed within the site boundary. Four Anabat Express bat detectors were left for a period of 5 nights during the months of July to September inclusive. Three Anabat Express bat detectors were left for a period of 5 nights during the months of October and April to June inclusive each time to record bat activity within the area. All recorded data was downloaded and assessed using Analook software. Tables showing the data used to inform the bar charts illustrating the results of the static monitoring are provided within Appendix 2.

The location of each anabat is shown in Appendix 1. The survey periods and a brief description of the activity recorded is given below. Species references within each chart are:

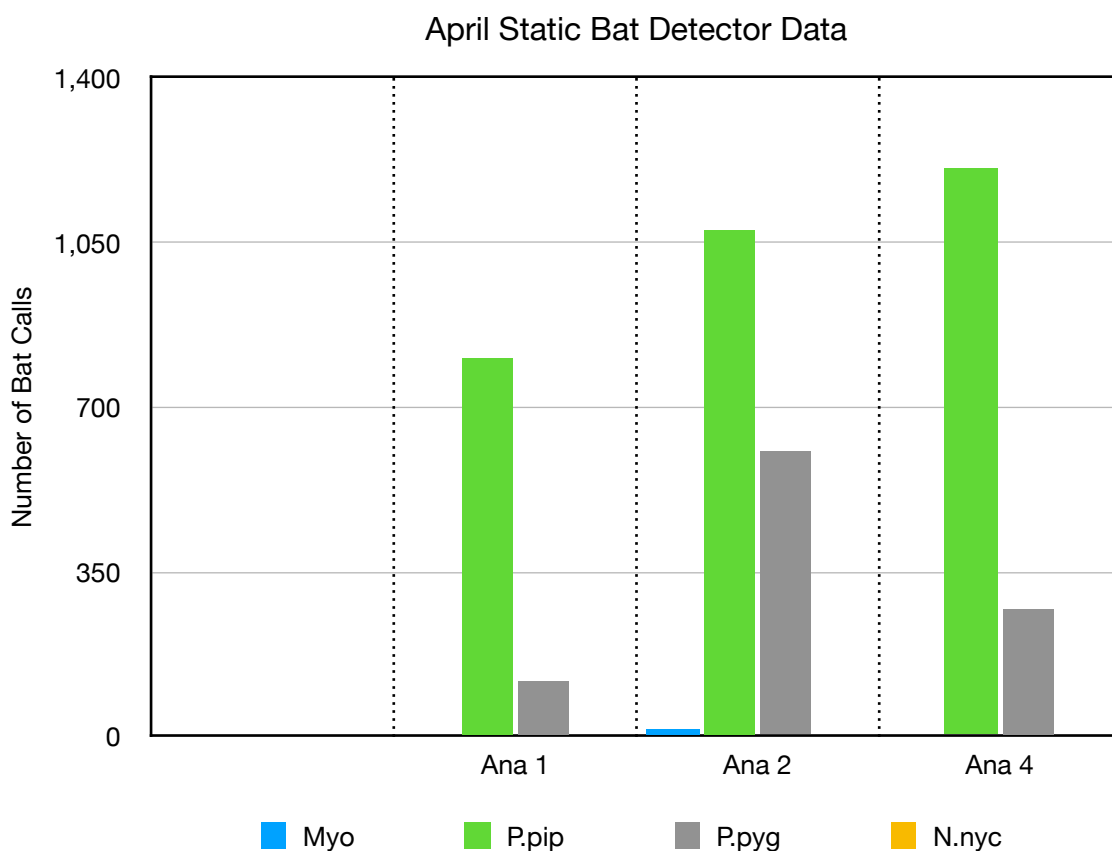
- Myo.sp = *Myotis species* (Myotis Species)
- P.pip = *Pipistrellus pipistrellus* (Common Pipistrelle)
- P.pyg = *Pipistrellus pygmaeus* (Soprano pipistrelle)
- N.noc = *Nyctalus noctula* (Noctule)

- P.aur = *Plecotus auritus* (Brown long-eared)
- R.hip = *Rhinolophus hipposideros* (Lesser Horseshoe)

- 23rd April- 27th April 2022

The overall activity recorded during the static surveys this month is considered to be high. Consistent bat calls from both Common and Soprano Pipistrelle bats were recorded by all anabats. The most recorded species was Common Pipistrelle at each detector location. Anabat 2 and anabat 4 also recorded a small number of myotis species and Noctule bat calls. Overall anabat 2 recorded the most data, given its proximity to the River Taff this is not unexpected.

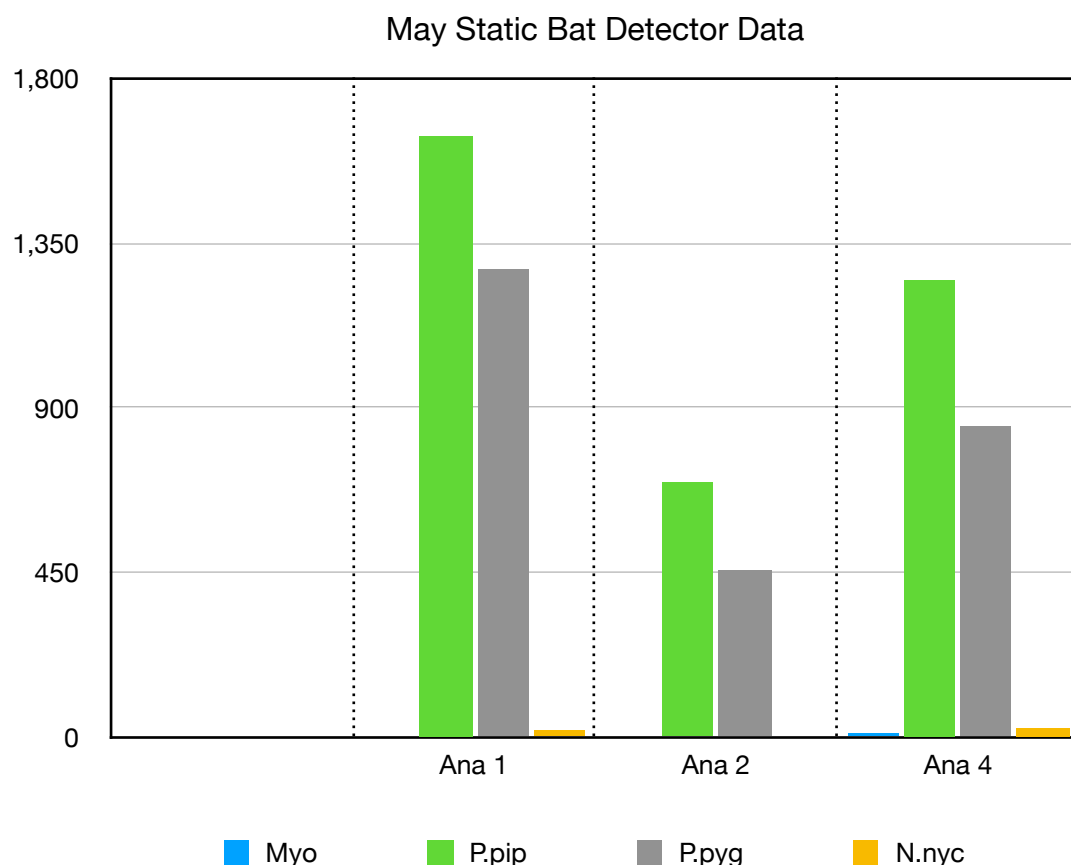
Bat activity was recorded throughout the night at each detector location. Most activity was recorded on the 23rd and 24th April by all anabats and the activity is throughout the night. On the 25th to 27th activity was mostly recorded between sunset and midnight with a much smaller number of calls from midnight to dawn.



- 13th May - 17th May 2022

Anabat 1 recorded the most amount of bat activity during the survey period. Almost continuous Common and Soprano pipistrelle bat calls were recorded during each night. A higher frequency of bat calls were recorded between sunset and midnight but calls were still recorded frequently from 00:00 and 04:00. Anabat 4 also recorded very high levels of Soprano and Common Pipistrelle bat activity. The activity is continuous throughout the night but less calls per minute are recorded compared to anabat 1. The latest bat calls recorded by anabat 4 are all around 05:00 indicating a bat roost is likely to be closer to anabat 4 than anabat 1.

Anabat 2 recorded the lowest number of bat calls but calls are still recorded throughout the night at this location. Interestingly a larger amount of calls are recorded between 01:00 and 05:15 each night compared to earlier in the night. Very little activity by any other bat species is recorded by any other bat species by all three anabats. Occasional myotis and Noctule bat calls are recorded between sunset and 01:00

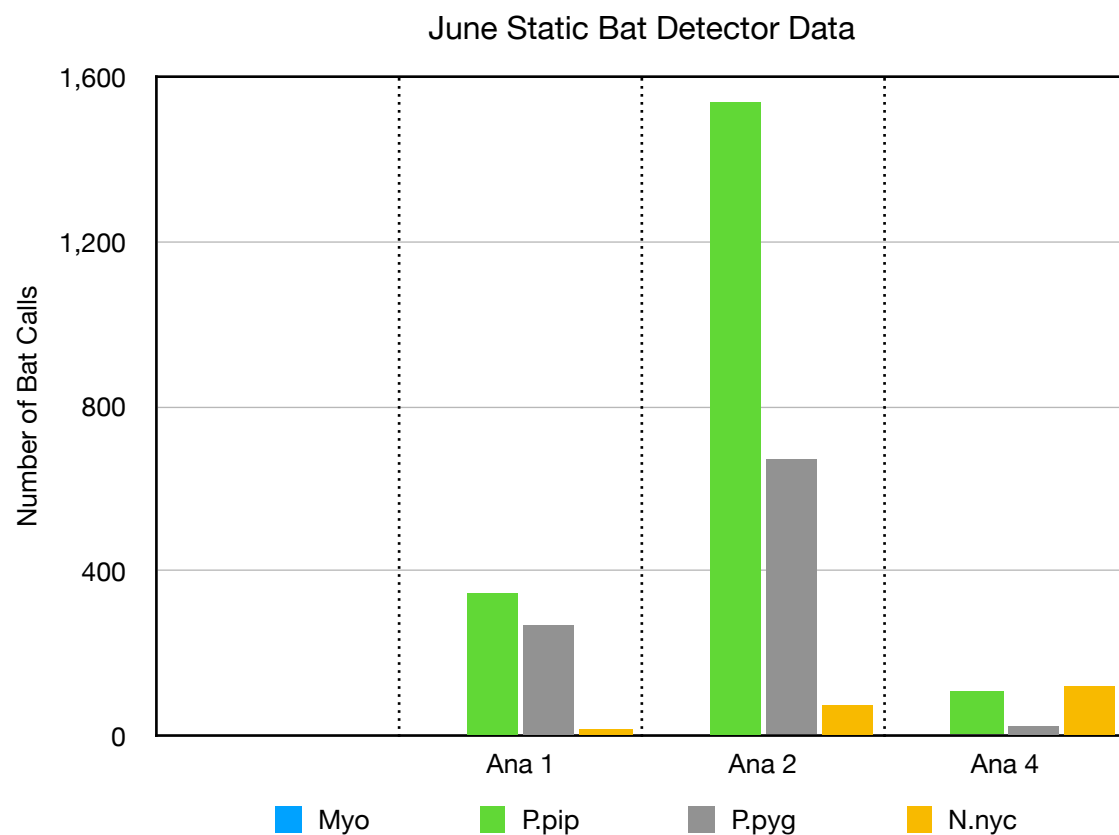


- 25th June - 29th June 2022

The most amount of bat activity was recorded by anabat 2. The most frequently recorded species was Common Pipistrelle bat. Bat calls were recorded throughout the night from 21:20 to 04:30 with a higher number of calls recorded between 21:30 and 00:00. A noticeably higher number of Noctule bat calls were recorded on the 29th June by anabat 2 compared to all other nights.

The least amount of bat activity was recorded by anabat 4 with no bat calls were recorded on the 28th June. A high proportion of bat activity recorded each night by anabat 4 was for Noctule bat compared to the other two detector locations. The highest number of Noctule calls recorded by anabat 4 was on the 29th June, similar to anabat 2 perhaps indicating the bats were commuting along the river.

Anabat 1 recorded bat calls from 21:00 which is earlier than anabat 2 and 4 perhaps indicating a roost ref both Common and Soprano pipistrelle bats in closer proximity to the detector location. Activity is recorded throughout the night at ananda 1 but the number of calls between 22:00 and 03:00 is less when compared to around sunset and sunrise. The least amount of Noctule bat activity was recorded by this anabat but it still showed a peak in Noctule activity on the 29th June.

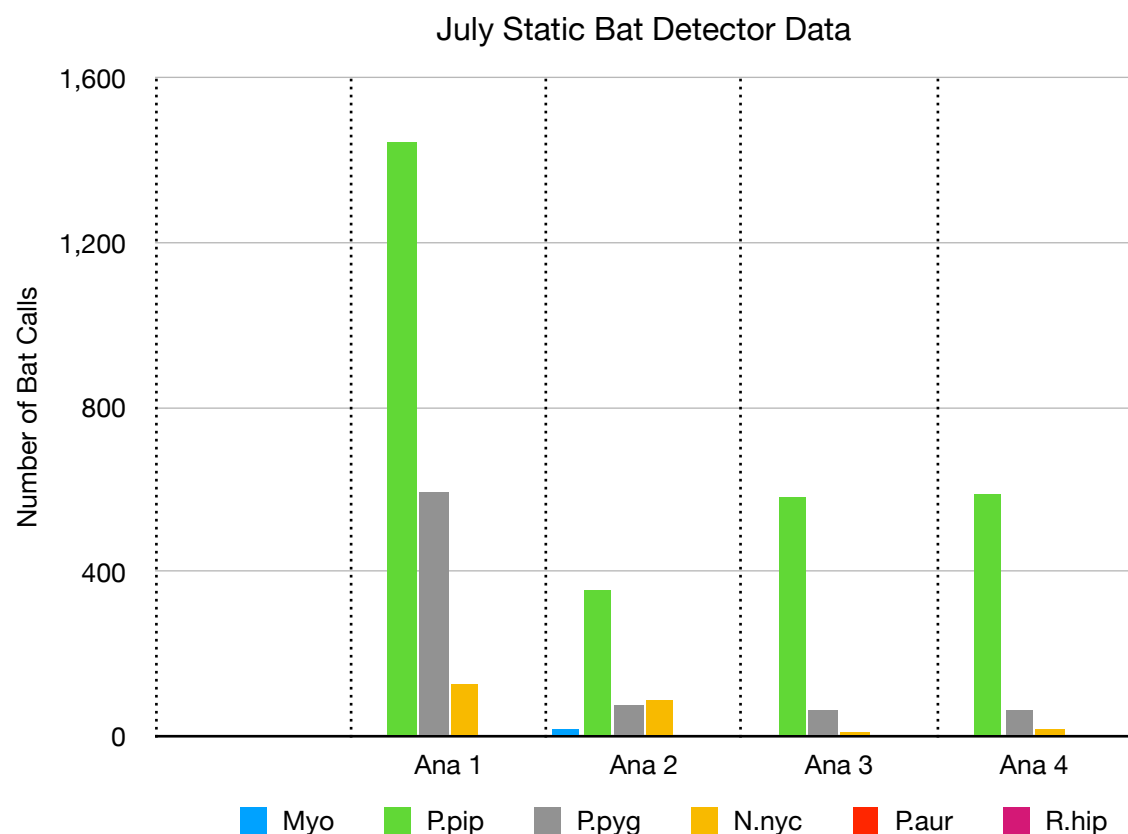


- 1st July - 5th July 2021

A large amount of activity was recorded at all 4 static detector locations. However the anabat location that had the most activity was anabat 1 to the north of the site. At this detector location the overwhelming majority of Common pipistrelle, Soprano pipistrelle and Noctule bat activity was recorded. Activity by pipistrelle species in particular was almost constant through out the night. Noctule activity peaked at dusk and dawn with limited calls throughout the night.

The most activity for myotis bat species was recorded at anabat 2. The myotis calls were all recorded roughly between 23:00 and 03:00. A very small number of calls indicative of Lesser horseshoe bat were recorded at all four static detector locations. The calls appeared to be a lower harmonic of a horseshoe bat with the characteristic shaped call but down around 40kHz. The calls were all recorded within 2 hours of sunset. A very small number of Brown Long eared bat calls were recorded at anabat 1 and 4, none were recorded by anabat 2 or 3.

Overall the most recorded bat species was Common pipistrelle bat. The species was recorded consistently at all anabat locations but anabat 1 had the most calls from this species. Soprano pipistrelle bat was also recorded by all 4 anabats but the most calls were recorded at anabat 1 as well. Noctule bat calls were recorded at all 4 anabat locations but noticeably more calls were recorded at anabat 1 and 2.

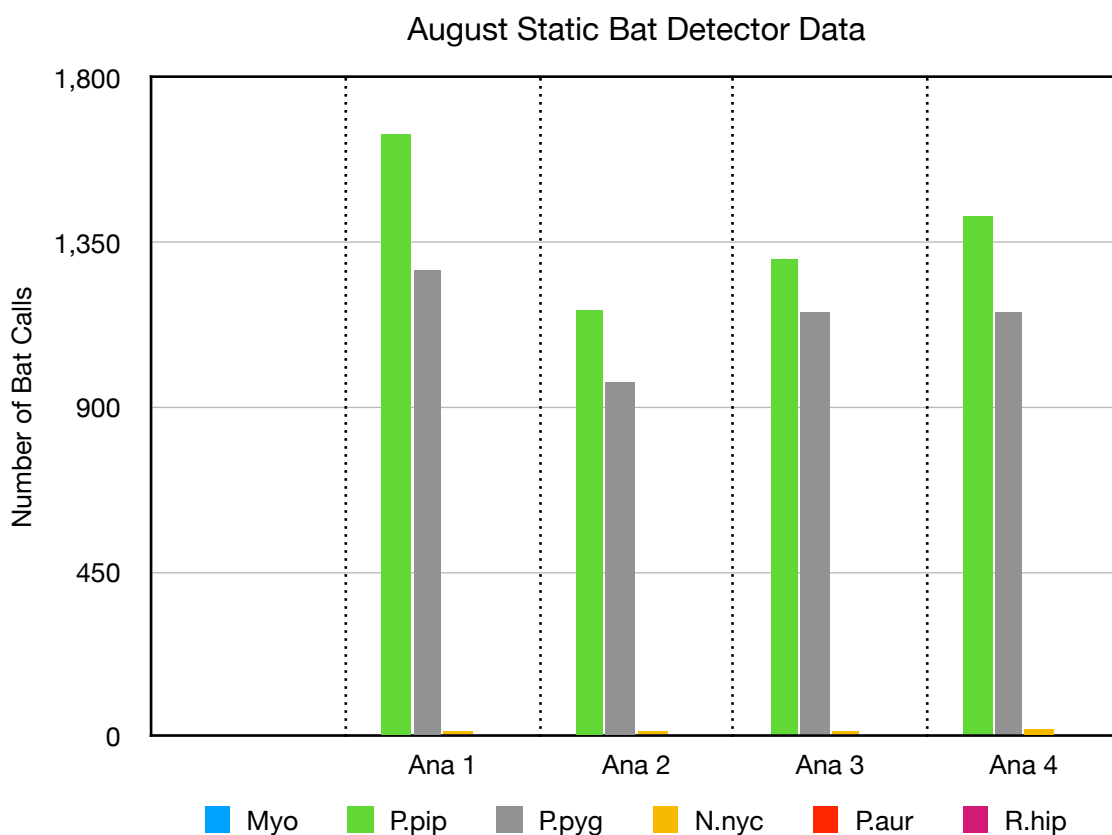


- 4th August - 9th August 2021

A large amount of activity was recorded at all 4 static detector locations. The anabat location that had the most activity was anabat 1 to the north of the site. At this detector location the overwhelming majority of Common pipistrelle, Soprano pipistrelle and Noctule bat activity was recorded. Activity by pipistrelle species in particular was constant throughout the night. A small number of pipistrelle social calls were also recorded at anabat 1.

A consistently low number of myotis species and Brown Long Eared bat calls were recorded by all static bat detectors. Again anabat 2 recorded the most myotis species of bat calls indicating they commute along the river corridor. A very small number of calls indicative of Lesser horseshoe bat were recorded at all by anabat 1, 2 and 3. The calls appeared to be a lower harmonic of a horseshoe bat with the characteristic shaped call but down around 40kHz. The calls were again all recorded within 2 hours of sunset.

Overall the most recorded bat species was Common pipistrelle bat. However high levels of Soprano pipistrelle activity was recorded compared to previous summer months. The highest number of Noctule bat calls were recorded by Anabat 4.

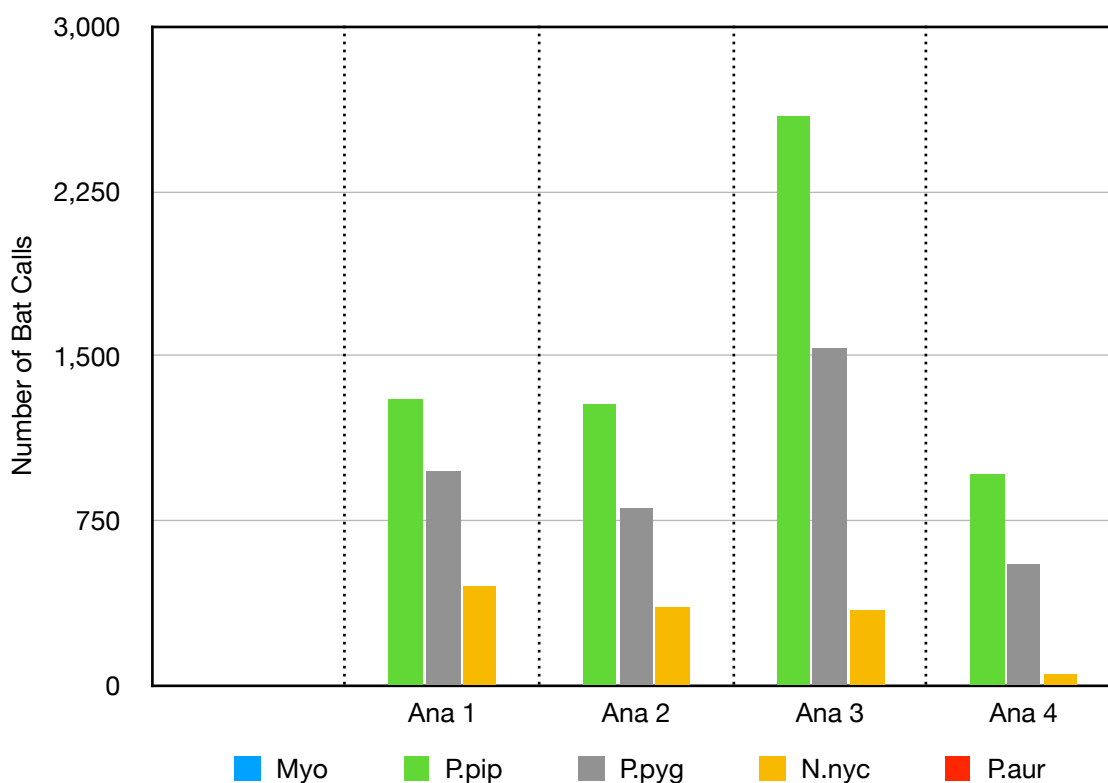


- 2nd September - 6th September 2021

The bat activity recorded by all detectors was fairly consistent throughout the nights without any clear peak in activity. The most bat activity was recorded by anabat 3 to the south of the development site. All calls were recorded between 19:00 and 05:00 and throughout the night, however extremely high frequency of calls for both Common and Soprano pipistrelle bats were recorded on the 2nd and 3rd September compared to the other 3 nights. The vast majority of the activity recorded was for pipistrelle bat species.

Anabat 1 and 2 recorded fairly similar levels of bat activity. Again the overwhelming majority of bat calls were by Common and Soprano Pipistrelle bat. Anabat 2 recorded a single Serotine bat call on the 3rd September at 20:02. Common and Soprano pipistrelle bat calls were recorded throughout the night but a higher frequency of bat calls were recorded between sunset and 00:00. The 4th, 5th and 6th September recorded less activity between 00:00 and 05:00 compared to sunset to 00:00. Activity on the 2nd and 3rd of September was constant throughout the night.

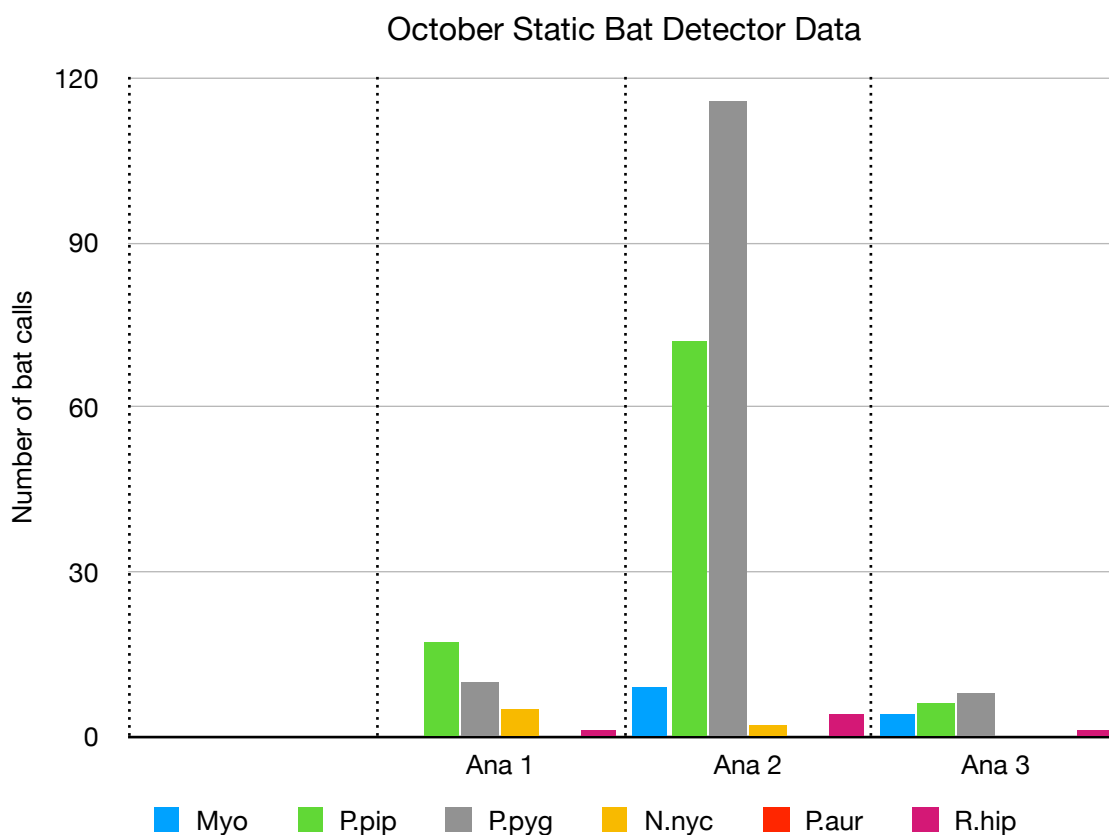
September Static Bat Detector Data



- 19th October - 23rd October 2021

The static detector which recorded the most bat activity was anabat 2. The most recorded bat species was Soprano and Common pipistrelle bat at anabat 2. Anabat 2 also recorded the most myotis species bat calls compared to other locations.

A very small number of calls indicative of Lesser horseshoe bat were recorded at all three static detector locations. The calls appeared to be a lower harmonic of a horseshoe bat with the characteristic shaped call but down around 40kHz. The calls were recorded within 2 hours of sunset and very within 1 hour of sunrise. The calls were recorded fairly consistently at all 3 anabat locations.



4.3 Conclusions

Bat activity has been recorded across the site during the survey period of July 2021 to June 2022. For the walked bat transects the majority of activity recorded and observed was by Common and Soprano pipistrelle bats. The highest level of bat activity was noted during the months of May to September inclusive, in line with the period one would expect the most bat activity. Activity levels were reduced in April and October but still considered to be fairly high for the time of year. Activity was generally observed mostly along the interface

between the grassland and tree line and small areas of woodland or scrub. A lower level of activity than expected was observed along the eastern boundary adjacent to the river Taff. This could be due to the river being substantially lower than the height of the development site. Bats are likely to be flying lower than surveyor height and therefore not being recorded as frequently.

The static bat detectors were deployed to the north, south, east and west of site within the tree lines bounding the site. October recorded a significantly lower level of bat activity when compared to other months. A high level of noise was recorded by the anabats during the monitoring period, perhaps indicating poor weather during the nights which could lower bat activity.

The levels of activity recorded in April and May were much higher than expected. The use of the site appeared to change with the most activity recorded by Anabat 4 during April and Anabat 1 during May. Both these detectors were placed in areas of woodland with grassland adjacent and are likely to be rich in invertebrate life and fairly sheltered with longer and shorter vegetation. Sheltered areas with high level of invertebrate life are highly suitable for foraging use by bats which is likely reflected in the amount of data recorded.

The month that recorded the most bat activity was September. An extremely high level of Common and Soprano pipistrelle bat calls were recorded by anabat 3. The activity was constant throughout the night with no obviously higher period of activity. It is thought that the area was used by Common and Soprano pipistrelle bats for foraging rather than mating behaviour.

High levels of bat activity were recorded in August and September. During July and August anabat 1 recorded the most bat activity. The bat calls recorded were also fairly early, many first calls were before sunset. This level of activity and the timing of the calls indicate the presence of a possible maternity roost in the area. There are houses to the west of anabat 1 which could possibly hold a maternity roost. The resident bats then use the vegetation to the north of the site especially for foraging which results in the very high number of bat calls in July, August and September.

Interestingly Noctule bat activity was most recorded during September. Anabat 1, 2 and 3 all recorded at least 200 noctule calls which is far above the number of recordings for all other months for this species.

A small number of possible Lesser Horseshoe bat calls were recorded during the static bat detector monitoring in the summer. The calls appeared to be a lower harmonic of the classic lesser horseshoe call. It is possible the calls could be from a Common Pipistrelle bat without the FM component of the call. The calls are considered likely to be Lesser horseshoe bat and have been marked as such as a precautionary approach.

No single anabat location was consistently highly used by the overall number of bat calls recorded or by a particular species. Anabat 2 recorded the most activity for June and October . Anabat 1 recorded the most activity in May, July and August. Anabat 4 recorded the most bat activity in April and anabat 3 recorded the most activity in September. Common Pipistrelle bat was the most recorded species during each month. High levels of Soprano pipistrelle bat activity were also recorded each month.

It is concluded that the development site is well used by Common and Soprano pipistrelle bats throughout the year. The vegetation around the edges of the site and the grassland to the north are well used for foraging purposes by local bat populations. The River Taff along the eastern boundary of the site is an important foraging and commuting route for bats.

5. Recommendations and Mitigation

The proposals for the land within the site boundary are to create a residential development within the site. Development plans are still being finalised. The site will include residential housing with public open spaces and a newly created drainage swale along the western and southern edge. The narrow band of woodland along the western boundary of the site will be retained.

The data collected as part of the bat transect survey work demonstrates that the site is important for foraging and use by bats. The overwhelming majority of the bat calls recorded were for common pipistrelle bats closely followed by soprano pipistrelle. It is considered likely that a maternity roost site for both Common and Soprano pipistrelle bats is present within the local area.

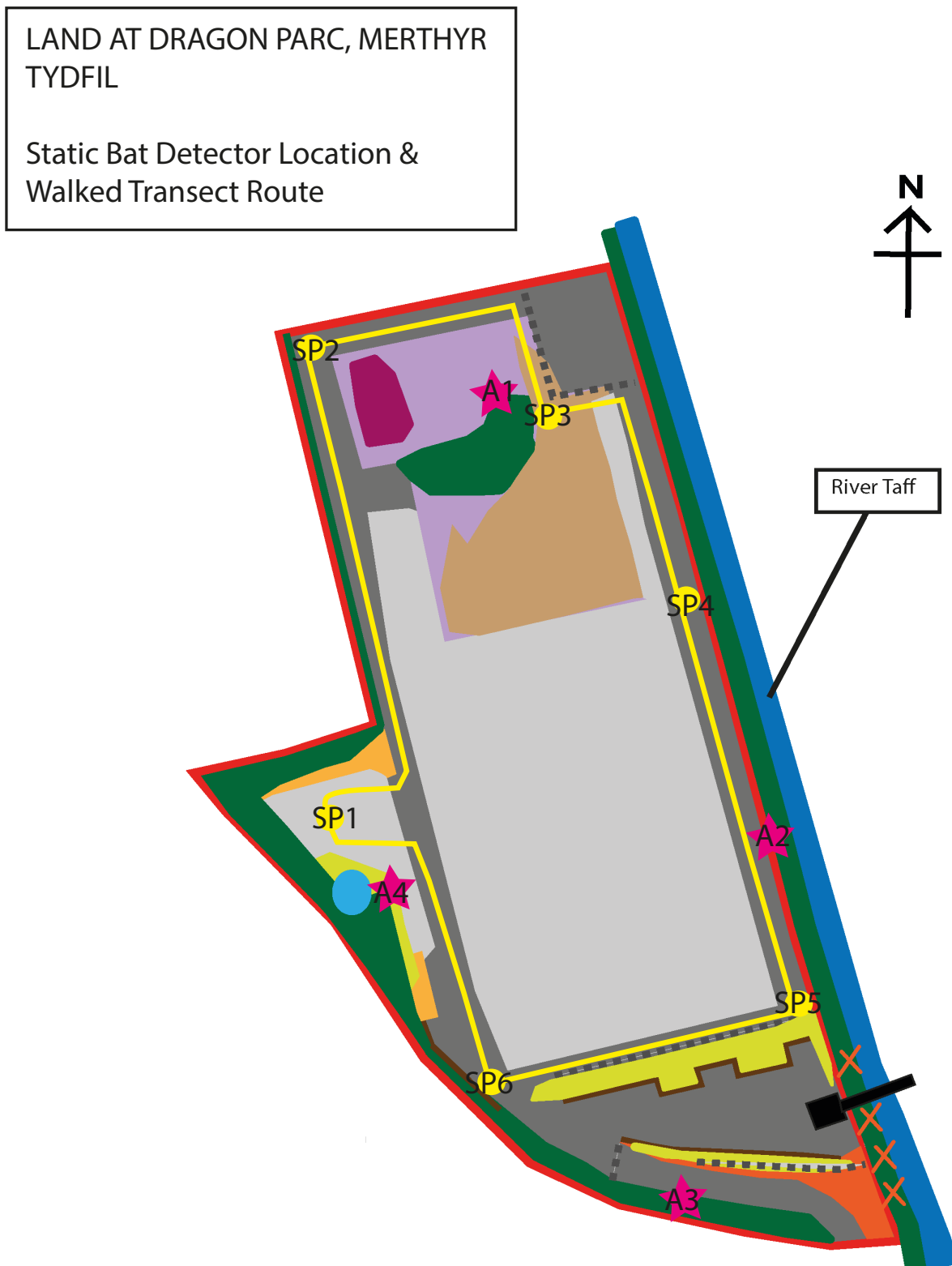
No favoured area or seasonal use of certain areas of the site was clear from the data collected. High levels of bat activity were recorded during each monitoring period. The River Taff is likely to be an important commuting route for local bat species across the wider landscape of Merthyr Tydfil county.

No further bat survey work is recommended at present. In summary the below recommendations are made to inform the development proposals within the site boundary:

- **Lighting must be designed to ensure no artificial light spill onto adjacent retained habitat.** Very limited glazing and or external lighting along the north, south and western boundary of the site should be used. The River Taff and eastern boundary of the site are of most importance to keep dark for use continued use by nocturnal species such as bats.
- The use of timed or motion activated external lighting, minimal and directional street lighting must also be explored and incorporated into the development where possible.
- The light levels around the periphery of the site must meet the recommendations within the BCT Guidance Note 08/18 Bats and artificial lighting in the UK document <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>. **The periphery of the site and all retained vegetation must have light levels that do not exceed 0.2 lux on the horizontal plane and 0.4 lux on the vertical plane.**
- Do not "over" light. This is a major cause of obtrusive light and is a waste of energy. Use only the minimum amount of light needed for safety. There are published standards for most lighting tasks, adherence to which will help minimise upward reflected light.

- Eliminate any bare bulbs and any light pointing upwards. The spread of light must be kept near to or below the horizontal.
- Use narrow spectrum bulbs to lower the range of species affected by lighting.
- Use light sources that emit minimal ultra-violet light. Insects are attracted to light sources that emit ultra- violet radiation.
- Reduce light-spill so that light reaches only areas needing illumination. Shielding or cutting light can be achieved through the design of the luminaire or with accessories, such as hoods, cowls, louvers and shields to direct the light.
- Reduce the height of lighting columns. Light at a low level reduces ecological impact. However, higher mounting heights allow lower main beam angles, which can assist in reducing glare.
- For pedestrian lighting, use low level lighting that is directional as possible and below 3 lux at ground level.
- Use embedded road lights to illuminate the roadway and light only high-risk stretches of roads, such as crossings and merges, allowing headlights to take up the slack at other times.
- Limit the times that lights are on to provide some dark periods for wildlife.
- Use lighting design computer programs and professional lighting designers to predict where light spill will occur.
- The use of soft landscaping within the development site can help to reduce habitat fragmentation and create foraging habitat for use by species such as bats. Planting and habitat management that encourages flowering plants and grasses will encourage insects. By using nectar rich plant species and reduced mowing regimes on grassland areas invertebrate species will be attracted. These habitats in turn will attract foraging bats. The creation of green corridors throughout the development site and a long term wildlife sensitive management plan are recommended.
- The creation of bat roosting features within the site boundary must be explored and included where appropriate. Integrated bat boxes within buildings for crevice dwelling species can be provided. The creation of a bat loft with a suitable fly in access point in the attic space of a building could also be a welcome enhancement for bats. The creation of an open fly in space through the adoption or co use of storage sheds or bin stores could create a roost site for free hanging bats such as Horseshoe species.

Appendix 1 – Survey Route & Anabat Locations



Appendix 2 – Static Bat Monitoring Data by Month

April 2022

Anabat 1				
	Myo	Ppip	Ppyg	Nnoc
23/4/22	0	160	45	0
24/4/22	0	387	48	0
25/4/02	0	17	8	0
26/4/22	0	160	15	0
27/4/22	0	81	2	0
	0	805	118	0
Anabat 2				
23/4/22	5	496	442	0
24/4/22	3	491	96	2
25/4/02	0	20	4	0
26/4/22	5	27	58	2
27/4/22	2	45	8	0
	15	1079	608	4
Anabat 4				
23/4/22	4	207	34	0
24/4/22	0	678	121	1
25/4/02	0	90	61	0
26/4/22	0	150	24	0
27/4/22	0	82	32	0
	4	1207	272	1

May 2021

Anabat 1					
	Myo	Ppip	Ppyg	Nnoc	BLE
13/5/22	3	367	264	0	0

14/5/22	2	302	257	0	0
15/05/2022	0	297	158	9	0
16/05/2022	1	332	265	7	0
17/5/22	1	346	331	0	0
	7	1644	1275	16	0
Anabat 2					
	Myo	Ppip	Ppyg	Nnoc	BLE
13/5/22	2	134	98	0	0
14/5/22	0	124	113	4	0
15/05/2022	1	176	105	2	0
16/05/2022	3	120	73	0	0
17/5/22	1	139	64	0	0
	7	693	453	6	0
Anabat 4					
	Myo	Ppip	Ppyg	Nnoc	BLE
13/5/22	2	267	64	5	0
14/5/22	2	213	207	0	0
15/05/2022	1	194	142	5	0
16/05/2022	3	287	204	7	0
17/5/22	1	286	231	4	0
	9	1247	848	21	0

June 2021

Anabat 1						
	Myo	Ppip	Ppyg	Nnoc	LHB	GHB
09/06/2021	0	28	1	0	0	0
10/06/2021	0	16	0	0	0	0
11/06/2021	0	19	0	0	1	0
12/06/2021	0	11	0	0	0	0
13/06/2021	0	17	0	3	1	0

	0	91	1	3	2	0
Anabat 2						
	Myo	Ppip	Ppyg	Nnoc	LHB	GHB
09/06/2021	0	19	0	0	0	0
10/06/2021	0	16	2	0	0	0
11/06/2021	0	34	1	0	0	0
12/06/2021	1	18	2	0	0	0
13/06/2021	0	25	2	1	0	0
	1	112	7	1	0	0
Anabat 4						
	Myo	Ppip	Ppyg	Nnoc	LHB	GHB
09/06/2021	0	17	6	0	0	0
10/06/2021	0	10	3	0	0	0
11/06/2021	0	14	0	0	0	0
12/06/2021	0	17	0	0	0	1
13/06/2021	0	16	0	0	0	0
	0	74	9	0	0	1

July 2021

Anabat 1						
	Myo	Ppip	Ppyg	Nnoc	BLE	LHB
1/7/21	1	134	114	23	1	1
02/07/2021	0	181	131	32	1	0
03/07/2021	0	507	169	35	0	0
04/07/2021	0	361	94	24	0	1
05/07/2021	1	257	83	13	1	0
	2	1440	591	127	3	2
Anabat 2						
	Myo	Ppip	Ppyg	Nnoc	BLE	
1/7/21	4	77	10	20	0	2

02/07/2021	3	135	28	26	0	1
03/07/2021	6	70	20	28	0	2
04/07/2021	2	32	11	13	0	0
05/07/2021	1	38	7	0	0	0
	16	352	76	87	0	5
Anabat 3						
	Myo	Ppip	Ppyg	Nnoc	BLE	
1/7/21	1	190	13	3	0	2
02/07/2021	0	165	16	3	0	0
03/07/2021	0	171	24	6	0	2
04/07/2021	2	53	6	0	0	0
05/07/2021	0	0	0	0	0	0
	3	579	59	12	0	4
Anabat 4						
	Myo	Ppip	Ppyg	Nnoc	BLE	
1/7/21	1	190	13	3	0	0
02/07/2021	0	165	16	3	0	0
03/07/2021	0	171	24	6	0	0
04/07/2021	2	53	6	0	0	0
05/07/2021	0	7	1	4	2	0
	3	586	60	16	2	0

August 2021

Anabat 1						
	Myo	Ppip	Ppyg	Nnoc	BLE	LHB
04/08/2022	3	367	264	0	1	0
05/08/2022	2	302	257	0	0	1
06/08/2022	0	297	158	9	2	2
07/08/2022	1	332	265	7	0	0
09/08/2022	1	346	331	0	0	1

	7	1644	1275	16	3	4
Anabat 2						
	Myo	Ppip	Ppyg	Nnoc	BLE	LHB
04/08/2022	2	134	98	0	0	1
05/08/2022	0	224	183	2	0	0
06/08/2022	3	301	269	4	2	0
07/08/2022	1	220	173	3	1	1
09/08/2022	1	283	247	2	1	0
	7	1162	970	11	4	2
Anabat 3						
	Myo	Ppip	Ppyg	Nnoc	BLE	LHB
04/08/2022	0	197	138	1	1	2
05/08/2022	2	213	207	3	0	1
06/08/2022	0	287	275	2	1	1
07/08/2022	1	323	308	3	1	0
09/08/2022	1	286	231	2	0	2
	4	1306	1159	11	3	6
Anabat 4						
	Myo	Ppip	Ppyg	Nnoc	BLE	LHB
04/08/2022	1	254	217	3	0	0
05/08/2022	0	255	207	2	2	0
06/08/2022	0	342	301	5	1	0
07/08/2022	1	287	204	6	0	0
09/08/2022	1	286	231	4	1	0
	3	1424	1160	20	4	0

September 2021

Anabat 1					
	Myo	Ppip	Ppyg	Nnoc	BLE
02/09/2021	1	347	240	108	2

03/09/2021	0	279	324	123	2
04/09/2021	0	114	125	51	0
05/09/2021	0	276	167	76	1
06/09/2021	1	284	124	98	1
	2	1300	980	456	6
Anabat 2					
	Myo	Ppip	Ppyg	Nnoc	BLE
02/09/2021	1	612	246	108	2
03/09/2021	2	169	142	187	2
04/09/2021	1	74	125	51	0
05/09/2021	0	214	167	0	1
06/09/2021	0	214	124	12	1
	4	1283	804	358	6
Anabat 3					
	Myo	Ppip	Ppyg	Nnoc	BLE
02/09/2021	4	523	213	72	2
03/09/2021	2	643	357	109	0
04/09/2021	5	389	268	89	0
05/09/2021	1	540	312	42	3
06/09/2021	0	498	378	34	2
	12	2593	1528	346	7
Anabat 4					
	Myo	Ppip	Ppyg	Nnoc	BLE
02/09/2021	1	312	176	13	2
03/09/2021	2	169	78	23	2
04/09/2021	1	125	59	9	0
05/09/2021	0	148	114	0	1
06/09/2021	0	208	124	7	0
	4	962	551	52	5

October 2021

Anabat 1					
	Myo	Ppip	Ppyg	Nnoc	LHB
19/10/21	0	15	4	3	0
20/10/21	0	0	6	2	0
21/10/21	0	1	0	0	0
22/10/22	0	1	0	0	0
23/10/22	0	0	0	0	0
	0	17	10	5	0
Anabat 2					
	Myo	Ppip	Ppyg	Nnoc	LHB
19/10/21	3	67	53	1	0
20/10/21	3	0	56	0	0
21/10/21	0	0	0	0	0
22/10/22	3	0	4	1	0
23/10/22	0	5	3	0	0
	9	72	116	2	0
Anabat 4					
	Myo	Ppip	Ppyg	Nnoc	LHB
19/10/21	0	3	0	0	0
20/10/21	2	0	3	0	0
21/10/21	0	2	0	0	0
22/10/22	2	0	0	0	0
23/10/22	0	1	5	0	0
	4	6	8	0	0

Project: Ecological lighting assessment

7. Appendix B -Alder Ecology UK Ltd- Ecological lighting assessment November 2022

See attached

www.aldereecology.co.uk



ALDER ECOLOGY UK LTD

Working for the Client - Working with Wildlife

Dragon Parc, Abercanaid, Merthyr Tydfil, CF48 1YT

AEUK 1360

Ecological Lighting Assessment

Roger Martindale

30th November 2022



Registered Company address:

**Alder Ecology UK Ltd, 22, Millards Close, Hilperton Marsh, Trowbridge, Wiltshire
BA14 7UN**

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Company registration number 6852967

Project: Ecological lighting assessment

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Project: Ecological lighting assessment

1. Introduction

The site Dragon Parc is located at Graig Road, Troed-y-rhiw, Abercanaid, Merthyr Tydfil CF48 1YT and is centred on National Grid reference SO054042 (What3words fever.onions.advice). The site is a former industrial site which has undergone demolition leaving building rubble and access roads with a grassed swale and vegetated boundary on the west side. The site runs parallel to the River Taff on the east boundary and the river sits over 10m below the height of the site and has a mixture of native and non native species along the bankside.

The site has been subject to a number of ecological surveys over the past 7 years during different stages of the site and the site has continued to remain ecologically poor in terms of habitats and species composition.

2. Ecological lighting assessment

The aim of the ecological lighting assessment is to understand the baseline levels of light on site from offsite sources and light trespass.

Objectives

- Identify areas of significant light trespass
- Identify areas of significant light spill
- Provide an ecological lighting plan to understand potential impacts on wildlife
- Provide guidance to site design and lighting plan

Method

Ecological Lux level baseline for the site has been assessed taking readings 1hr 30mins after sunset. The site has been assessed using standard industry equipment the Minolta T10 Luminance meter with all readings taken in a horizontal plane. The survey also uses night shot photography to illustrate light spill and light trespass. In order to show light spill over the site a DJI Mavic mini drone was used to provide landscape context.

The lighting outputs have first been recorded and mapped with all the luminaries both on and off site considered during this process including offsite light spill and light trespass.

Project: Ecological lighting assessment

Illuminance levels throughout the site and at the boundary have been produced so that the current site baseline is understood. The Lux levels on the map below shows current levels including light trespass from adjacent areas.

Light trespass has been assessed and the line of sight from neighbouring properties has also been considered in terms of impact on the site.

The Society of Light & Lighting guidance documents all apply a common Environmental Zoning system, which is summarised below.

Zone E1

Areas with intrinsically dark landscapes: National Parks, areas of outstanding natural beauty (where roads are usually unlit) Rural Environmental

Zone E2

Areas of 'low district brightness': outer urban and rural residential areas (where roads are lit to residential road standard) Urban Environmental

Zone E3

Areas of 'middle district brightness': generally urban residential areas (where roads are lit to traffic standard) Urban Environmental

Zone E4

Areas of 'high district brightness': generally urban areas having mixed recreational and commercial land use with night-time activity

Project: Ecological lighting assessment

3. Ecological lighting assessment results



Map 1 Ecological lux level readings horizontal plane 3rd October 2022

Luminance meter *Lux level taken using Minolta T10 Luminance meter in horizontal plane.

Moon phase *3rd October 2022 lunation First Quarter moon 56% illuminated at 1/8 oktas cloud cover

Project: Ecological lighting assessment

4. Photographic plates



Plate 1 Site entrance looking north light spill recorded at 21.8 lux



Plate 2 View from site entrance looking south 21.8 lux shown in plate 1

Project: Ecological lighting assessment



Plate 3 Light spill from across the River Taff to the east recorded at 0.4 lux



Plate 4 Light trespass on the west boundary Wildwood [road] recorded at 0.5 lux

Project: Ecological lighting assessment



Plate 5 West boundary light trespass from Green squares industrial unit recorded at 2.45 lux

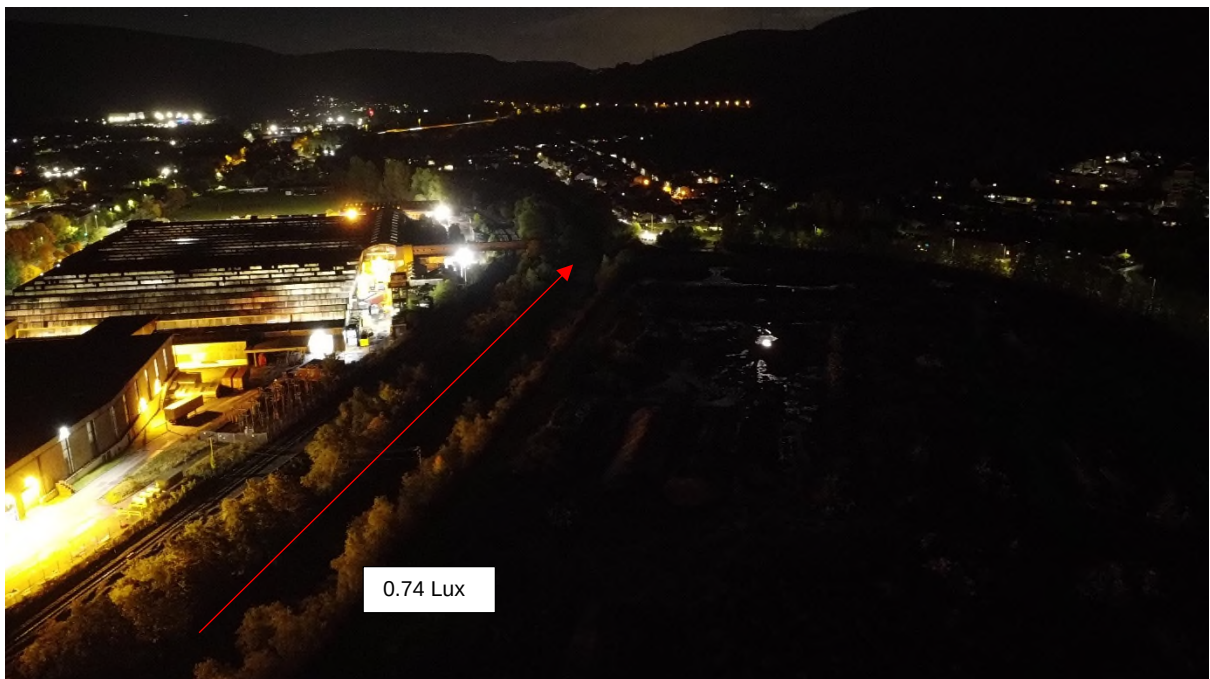


Plate 6 Drone view of the site looking south River Taff corridor marked with arrow

Project: Ecological lighting assessment



Plate 7 Looking north towards site entrance marked with arrow

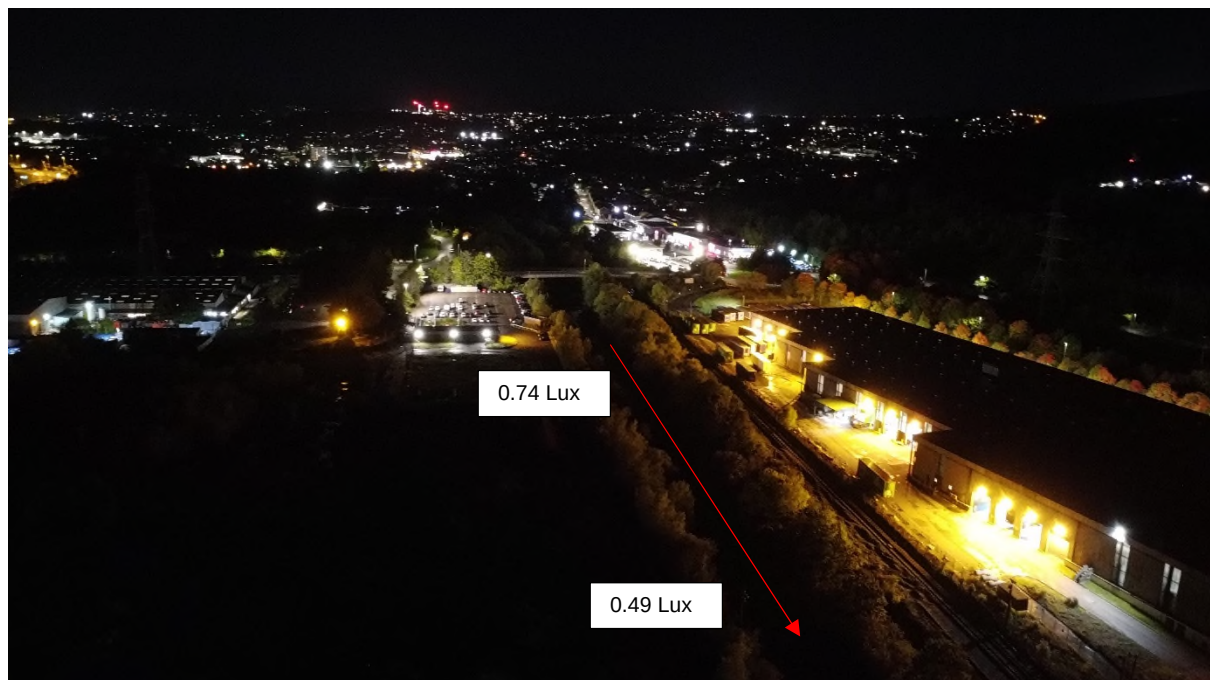


Plate 8 Looking north towards site entrance River Taff marked with arrow

Project: Ecological lighting assessment



Plate 9 Northwest boundary showing offsite light spill

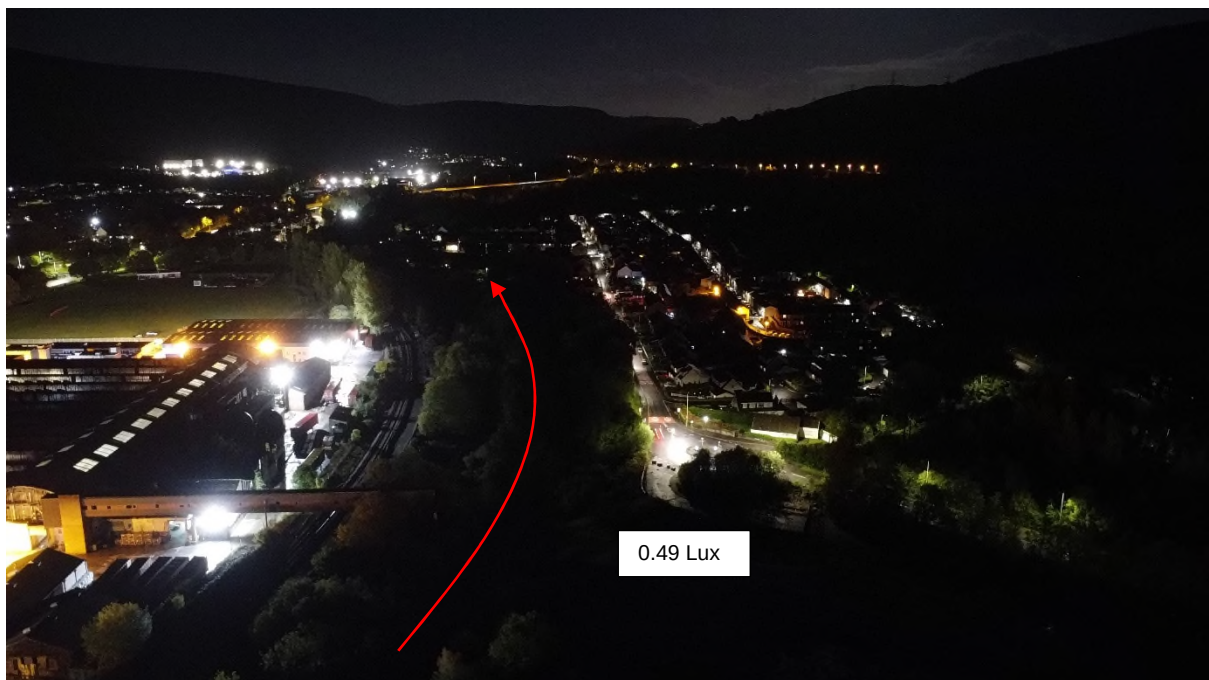


Plate 10 Looking south from the south of the site River Taff marked with arrow

Project: Ecological lighting assessment



Plate 11 Showing west boundary and north boundary light spill



Plate 12 Showing light spill from Wildwood [road] on the west side

Project: Ecological lighting assessment



Plate 13 Showing off site light spill from industrial units to the east River Taff arrowed

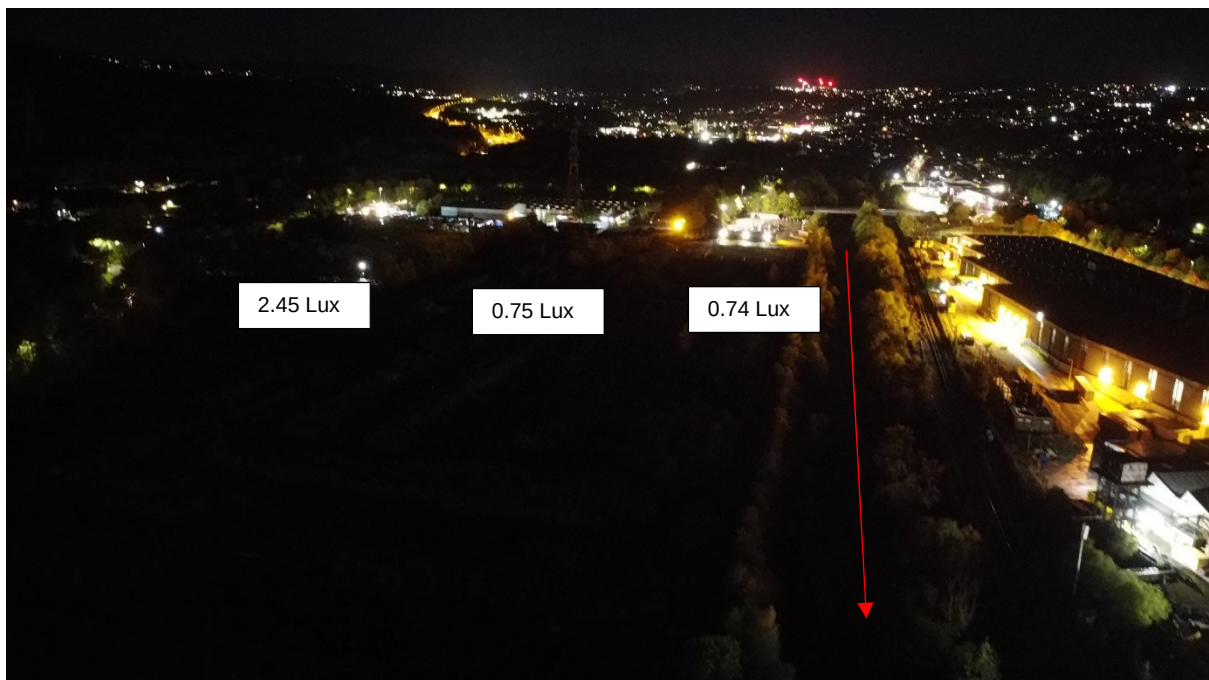


Plate 14 Lux level transect across the site, River Taff arrowed

5. Discussion

The local area around Dragon Parc is light industrial and commercial units which operate over extended time periods so many businesses require both security lighting and lighting for loading and unloading of materials. Further to the south west are residential properties with municipal street lighting spilling onto the site at Wildwood [road]. No doubt when the Dragon Parc site was operational it would have had similar requirements to local businesses and had similar light levels. Once the site ceased trading this would have significantly changed the site light levels to a lower level despite off site light spill and trespass. However, the lack of habitats on site would have been a limiting factor in significantly changing the abundance of wildlife using the site especially as a foraging resource.

The ecological lighting assessment found the site to sit predominantly in zones 3 and 4 with some limited areas in zone 2. The areas in zone 3 and 4 are the areas where most vegetation is located as it mainly provides boundaries to the site. The areas in zone 2 are areas away from vegetation and closest to the site centre and furthest from the light spill in most cases.

The bat surveys (Ecological Services Ltd September 2022) found that five bat species are regularly using the site for commuting and foraging with common and soprano pipistrelle the most abundant species. A sixth species Lesser Horseshoe bat was thought to be using the site but this was not confirmed with clarity despite further surveys. The areas most used by the bats were the west boundary, north-west boundary and east boundary close to the River Taff. This suggests that these areas provide foraging resources for local bats and timings of the recordings suggest bat roosts to be located close to the site. The ecological lighting assessment confirms these three areas as having generally lower lux levels than other areas of the site although common pipistrelle bats were observed foraging at 21.8 lux close to the site entrance in October 2022. Nevertheless, it is good practice to try and maintain baseline lux levels to help sustain local bat populations when they have been confirmed to be using the site.

Any proposed site lighting scheme needs to take account of the baseline lux levels and where possible maintain low light levels in areas proven to be regularly used by bats to help maintain local bat populations. Any housing scheme within an urban setting will require municipal lighting but this should try and provide corridors for bats to move through the site in a north to south, east to west direction and maintain and increase foraging resources with the planting of native vegetation within any landscape scheme. These corridors will be of benefit to other locally occurring wildlife nocturnal and crepuscular wildlife species.

Project: Ecological lighting assessment

Any development of the site would not affect the favourable conservation status of local bat populations if the recommendations below are fully adhered to during development. Development of the site would not impact on permanently roosting or night roosting bats and would not disrupt feeding and commuting routes based on the current proposal and the results obtained during the survey.



Map 2 Movement corridors for bats to be retained or enhanced for the site

Project: Ecological lighting assessment

6. Conclusions

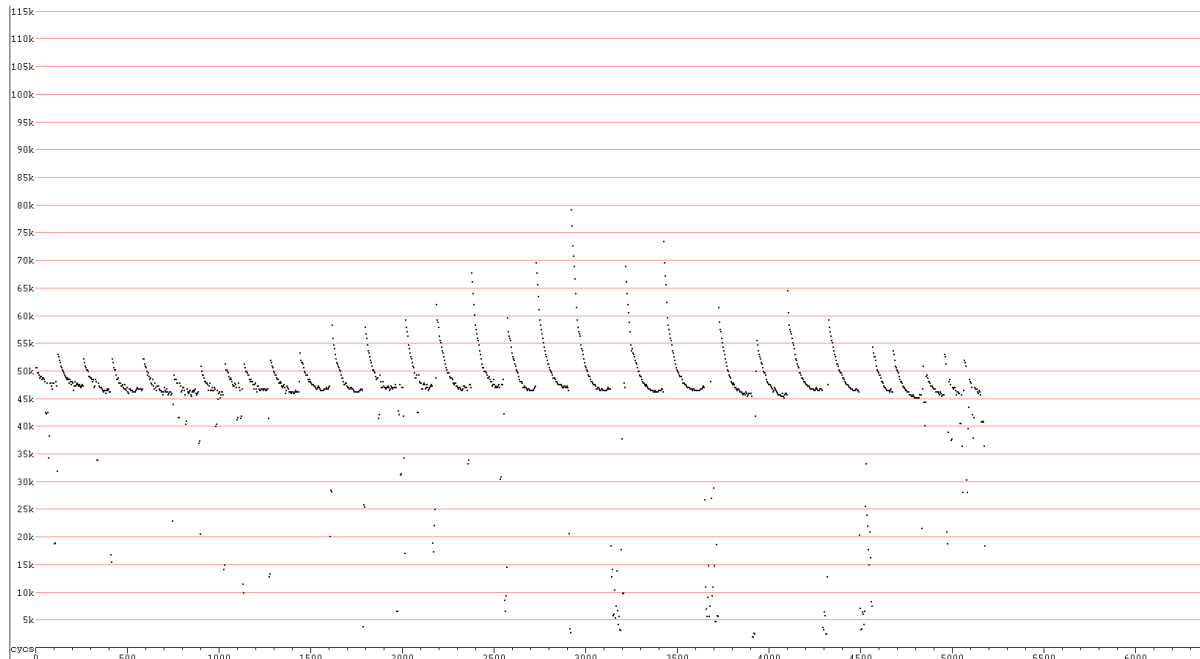
The ecological lighting assessment survey concludes that the site sits predominantly in zones 3 and 4 with some areas in zone 2 but that the site baseline light levels are high due to light spill and light trespass from offsite locations. The bat survey on site found that the site is used by foraging and commuting bats in moderate numbers and that total of six bat species have been confirmed as using the site during the surveys which are common pipistrelle bat, soprano pipistrelle, noctule bat, Myotis sp, long eared bat and potentially Lesser horseshoe bat. The most commonly recorded species are common pipistrelle bats and soprano pipistrelle bats. The area's most frequently used by the bat species according to the survey results corresponds with areas of predominantly lower lux levels and with a vegetation corridors which provide foraging opportunities.

The survey concluded that the proposed scheme layout means that bats would not be detrimentally impacted by the proposed scheme as it currently stands and it would not be detrimental to the maintenance of favourable conservation status in their natural range. However, it is important to maintain and enhance site vegetation as recommended in the landscape scheme as such features have been proven to be important for bat movements on and through sites. The survey concluded that the proposed scheme is unlikely to either directly or indirectly impact on bats or other nocturnal or crepuscular species as the main features for wildlife are in the retained and unaffected boundary features.

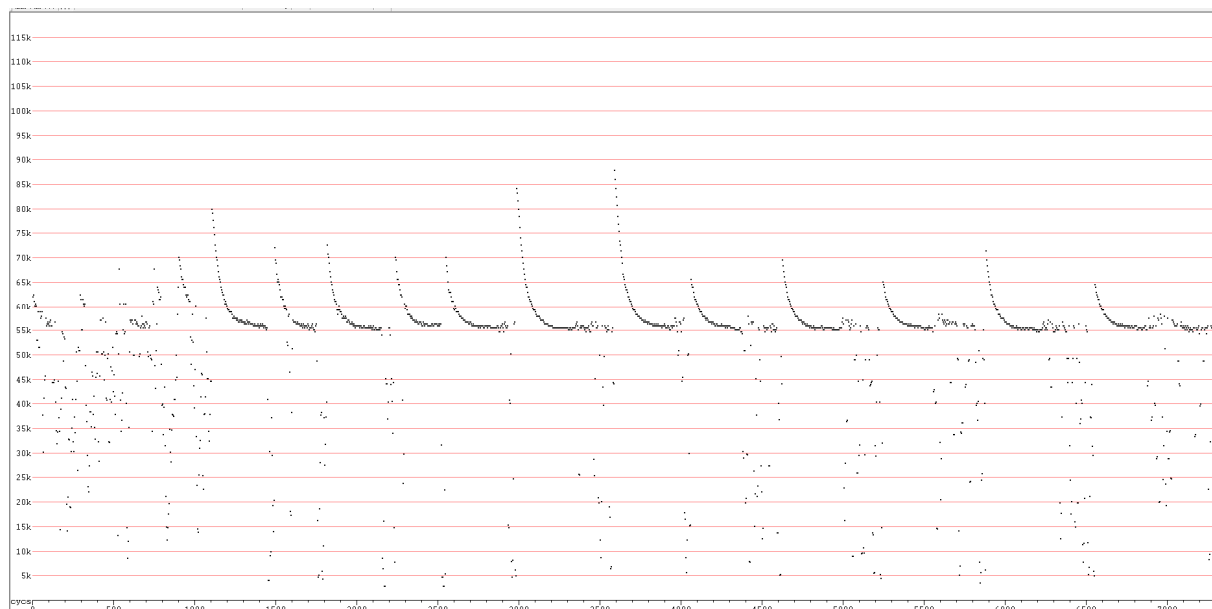
Bats are a Biodiversity Action Plan (BAP) species/group in Wales and the UK and therefore in order to not only comply with the legislation but to meet BAP targets the maintenance and enhancement of bat colonies is a primary goal for Wales and the UK moving forwards. Any sites with bats should seek to avoid disturbance and destruction of the roost and the bats themselves and aim to incorporate plans that actively promote bat conservation by incorporation of features which can be utilized by bats for either foraging or roosting in the long term. Therefore measures to promote bat species such as planting of native species vegetation and incorporation of integrated bat boxes on site into new units should be promoted.

Project: Ecological lighting assessment

7. Dragon Parc Merthyr Tydfil Bat Sonogram example



Common pipistrelle Bat foraging on site 3rd October 2022 at lux level 21.8



Soprano pipistrelle recorded foraging on site 3rd October 2022 at lux level 5.43

Project: Ecological lighting assessment

8. Appendix C- Ecological Services Ltd – NVC and reptile survey March 2022.

See attached

NVC & Reptile Survey Report



Project: Dragon Parc, Merthyr Tydfil

Instructed by: Davies Homes Ltd

Reported by: Ecological Services Ltd
10 Mount Pleasant, Llanelly Hill, Abergavenny, Monmouth NP7 0NT
Reported by

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Contents

1. Introduction
2. NVC Survey
3. Reptile Survey
4. Recommendations and Mitigation

Appendix

Site Photographs

Quadrat Locations

Species List

Reptile Refugia Location

Reptile Survey Results

1. Introduction

The applicant is seeking permission to create a residential development within a parcel of land at Dragon Parc, Merthyr Tydfil centred at SO 05436 04336. The proposed development site was previously a site of a Hoover Factory within Merthyr Tydfil. The land has been cleared of the majority of the buildings leaving behind foundations and rubble piles across the majority of the site.

A suite of ecological survey work has previously been completed within the proposed development site in 2016 by ecologists from RPS. An initial site walkover survey was completed on 12th April 2016 which classified all habitats within the site boundary and their potential to support protected species and habitats. As the initial site inspection was undertaken at a suboptimal time of year, a more detailed botanical assessment of the grassland within the site was undertaken 23rd June 2016 which is an optimal time to undertake such surveys. The botanical survey concludes that none of the habitats within the site boundary qualify as UKBAP priority habitats. Full details of the survey methodology and results can be found in the Grassland Botanical Survey Letter Report dated 9th September 2019 by RPS.

A Preliminary Ecological Assessment (PEA) was completed by Ecological Services Ltd on the 13th August 2019. Two habitats which qualify as section 7 habitat under the Environment (Wales) Act 2016 and a UK Biodiversity Action Plan habitat were found within the site boundary. An area of marshy grassland to the north of the site and a small pond along the western edge of the site. The RPS and Ecological Services Ltd survey reports all highlight the potential of the grassland habitats within the site boundary to support reptile species.

Plans for the proposed development site have been split into two stages. Initial plans for the site required engineering works to be undertaken along the west and southern boundaries of the site to improve drainage within the site boundary. A detailed Ecological Impact Assessment (EclA) was completed by Ecological Services Ltd to inform the proposed drainage works. Planning consent for these works has been granted (P/20/0025) and on site works commenced in September 2021.

The remaining land within the site boundary is proposed for a residential development. The exact details of the proposals have not been finalised the PEA by Ecological Services Ltd highlighted the potential for the site to support various protected species and habitats. The site was sold to Davies Homes Ltd in 2021 and Ecological Services were instructed to

undertake ecological surveys within the site. Ecological survey work within the development site is on going and will feed into the proposals as they progress.

A reasonable level of botanical species diversity was noted within the grassland areas to the north of the development site. It was considered possible that the grassland habitats in this area may meet the criteria for a Site of Importance for Nature Conservation (SINC), a non statutory designation. As it would appear unlikely that the grassland could be retained as part of the development proposals an NVC survey of the grassland habitat was recommended. Reptile surveys across suitable habitat within the site boundary have also been undertaken.

1.1 [Site Description](#)

The land within the proposed site boundary is fairly flat with a lower level plateau present to the southern half of the site. The site measures approximately 8.2ha in size and was formerly used for light industrial purposes with a large warehouse, smaller ancillary buildings and car parking present. The site has been cleared of the majority of the buildings leaving behind foundations and rubble piles across the site. One building is still remaining to the south east of the site.

The site lies within the settlement of Abercainaid to the south of Merthyr Tydfil directly adjacent to the River Taff. The site is immediately surrounded by light industrial units to the north and west with residential housing present to the south of the site. A small area of woodland and the Taff Cycle Trail lie to the south west of the site.

1.2 [Survey Constraints](#)

Full access was gained across all areas of the proposed development site. The reptile survey was carried out in September which is within the optimum timeframe for such surveys.

An NVC survey of the site was completed the 9th July 2021 which is outside the optimum time to undertake botanical surveys.

1.3 [Surveyor Experience](#)

Aislinn Harris is a full member of Chartered Institute of Ecology and Environmental Management (CIEEM). Aislinn is an ecologist with 13 years experience undertaking a wide range of flora and fauna surveys. Aislinn is also a licenced bat ecologist (NRW S085699-1) and licenced dormouse ecologist (S085700-1).

Scott Watkins completed the reptile survey at the site. Scott is an ecologist with at least four years experience. Scott has worked for Ecological Services Ltd completing a range of reptile surveys and providing support on bat activity surveys throughout the survey season. All

survey work was overseen by Aislinn Harris, director of Ecological Services Ltd. All survey work is undertaken following guidelines in the Surveying for Reptiles booklet

2. NVC Survey

The proposed development site sits adjacent to the Rhos Tonyrefail SSSI, a statutory protected site. The proposed development site is managed through a mixture of grazing and mowing. A small area of grassland to the east of the site appeared to be less frequently managed and had a more diverse sward at the time of the PEA site visit in August 2020. In order to provide additional information on the habitats within the proposed development site the client requested a NVC survey was completed.

A National Vegetation Classification (NVC) level survey of the proposed development has been undertaken to provide detailed up to date botanical information on the quality of habitat within the SINC site boundary. A NVC survey follows a standard methodology to map plant communities within a designated area. A number of quadrats are sampled across a site and detailed identification of each vascular, bryophyte and macrolichen species within the quadrat is completed. The species assemblage within each quadrant can be used to characterise the habitats within the site boundary.

2.1 Survey Methodology

A National Vegetation Classification (NVC) survey follows a standard methodology to map plant communities within a designated area. A number of quadrats are sampled across a site and detailed identification of each vascular, bryophyte and macrolichen species within the quadrat is completed. The species assemblage within each quadrant can be used to characterise the habitats within the site boundary.

A site visit was made by Rebecca East on the 7th July 2021. Rebecca is an ecologist with over 15 years experience of ecological survey work and has attended relevant training courses on NVC survey techniques. Photographs of the grassland and wetland from 7th July 2021 habitat are provided in Appendix 1

10 2m by 2m quadrats were sampled across the northern grassland area of the development site. A map is provided within Appendix 2 of the approximate quadrant locations and NVC survey area. The cover / abundance of each vegetation type was recorded using a DOMIN scale. The data collected was analysed using MAVIS software.

2.2 Survey Results

The survey visit and data collected found that the grassland habitat best fit **M22b Briza media - Trifolium app Sub-community** with a 52.88% fit. The data collected in the wetland area is more tricky to correlate to a habitat type. The closest suitable habitat type was **M23b Juncus effusus sub-community** with a 37.65% fit.

2.3 Conclusions

The habitat mapped as marginal vegetation within the habitat map in the 2019 PEA report by Ecological Services Ltd is considered to be sub community of M23 Rush Pasture habitat. The habitat does not fit completely within the habitat definition and this is thought to be due to historic disturbance of the site (light industrial history) and the nature of succession due to lack of management.

The grassland habitat mapped as neutral grassland within the the habitat map in the 2019 PEA report by Ecological Services Ltd is considered to be a sub community of M22 Fen Meadow habitat. Again this habitat does not fit completely within the habitat definition but this is again thought to be due to the historic disturbance of the site and lack of management leading to natural succession.

Both habitat types are considered to meet the criteria for SINC quality habitat. The M22b Fen Meadow habitat . The M23b Rush Pasture and M22 Fen Meadow habitat are both considered to be SINC quality Marshy Grassland

3. Reptile Survey

3.1 Legislation

Reptiles such as slow worm, common lizard, adder and grass snake are protected under the Wildlife and Countryside Act 1981 (as amended). They are protected from killing, injuring and sale. In Wales sand lizard, smooth snake, adder, grass snake, slow worm and common lizard are listed in section 7 of the Environment (Wales) Act 2016 which makes them a key species to sustain and improve biodiversity.

3.2 Survey Methodology

A standard approach to presence/absence reptile surveys is to complete a minimum of seven site visits in suitable weather conditions and check artificial reptile refugia spread out across the survey site. Survey refugia for reptiles can be made from a variety of materials but the most common material used is roofing felt cut into squares measuring at least 0.75m by 0.5m.

Suitable weather conditions for reptile surveys are dry and cloudy or just after a period of rain. The weather conditions during these times must be between 9°C and 19°C which is optimal for reptiles to use the tins as reptiles bask to gather heat from the sun and surrounding habitat or direct sun. Once animals are sufficiently warm they become very active and more difficult to observe during reptile surveys. Reptile surveys should ideally be completed in the early morning or late afternoon in Spring or Autumn.

72 reptile tins were laid out across the proposed development site on the 27th August, 2021. The refugia were placed across the site in areas thought suitable for use by reptiles such as the edge of different habitat types. The approximate location of the reptile mats can be found in Appendix 4.

The tins were allowed to bed in for a minimum of 13 days. 7 survey visits were completed at site during suitable times of day when it is expected that reptiles would be present and also in favourable weather conditions. The survey started on the 9th September and finished on the 29th September 2021.

2.3 Survey Results

Full details of each survey visit and results are provided within Appendix 5. **No reptiles were found during any survey visit completed within the site.** A map of refugia locations is provided in Appendix 2.

4. Recommendations and Mitigation Measures

The proposals have not been finalised but it is understood that a residential development will be created within the site boundary. Ecological survey work within the site boundary is ongoing and therefore complete recommendations for the site cannot be provided at this point. The below broad recommendations are made to inform the development as plans for the site progress.

4.1 Habitat Recommendations

The grassland and wetland habitat to the north of the site is considered to meet the criteria for SINC quality Marshy Grassland. Policy EnW3 of the Merthyr Tydfil County Borough Council Local Development Plan states:

Development proposals likely to have an adverse impact on Regionally Important Geological Sites, Sites of Importance for Nature Conservation, Local Nature Reserves, or Priority Habitats and Species will only be permitted where it can be demonstrated that:

- 1. The need for the development clearly outweighs the conservation value of the site;**
- 2. Adverse impacts on nature conservation features or geological features can be avoided;**
- 3. Appropriate and proportionate mitigation and compensation measures can be provided;**
and
- 4. The development maintains and where possible enhances biodiversity and geodiversity interests.**

As a starting point for ecological considerations within the development site, every effort should be made to retain the SINC quality grassland as a whole or at least in part within the development site. If this cannot be achieved clear justification as to why will need to be provided.

Retaining marshy grassland within the site boundary will require consideration of the hydrology of the site as well. If it cannot be retained or created within the site boundary, off site compensation for the loss of the SINC quality grassland will be required. A similar habitat in the local area which would benefit from management to increase the condition and diversity would be preferable. It is suggested that consultation with the Local Planning Authority and County Ecologist is undertaken as soon as possible to agree a suitable level of compensation and a suitable compensation site.

Agreement between the client and compensation site owner will be required and permission to undertake management works provided. An initial PEA survey of the compensation site will most likely be required to ensure the site is suitable and provide base line data. Off-site compensation would most likely be secured via planning conditions or a Section 106 agreement.

4.2 Reptile Recommendations

The reptile surveys within the site boundary found no evidence of the presence of reptiles. Whilst no direct impacts to the reptile refugia were noted, the wider site engineering works may have affected reptile use. There is also a large amount of rubble scattered across the edges of the site provided natural refugia. It is thought unlikely that a large population of reptiles are present within the site boundary. However we cannot completely rule out the presence of a low density reptile population within the site boundary.

The clearance of any habitats suitable for reptile use i.e. the grassland, scrub and woodland areas will require a reptile mitigation strategy. The rubble within the centre of the site isolated by the tarmac road is considered to be less suitable for reptile use. The reptile mitigation strategy will include details of timing constraints and species deterrent measures to naturally encourage reptiles out of the development site. The exact details of the mitigation strategy will be finalised when plans for the site are fixed. However it is likely to include the below measures:

- Clearance of habitat suitable for reptile use during their active season of April to September inclusive,
- A two stage vegetation cut of suitable habitat ,
- Timing and directional vegetation cutting to naturally encourage reptiles into retained on site habitat,
- Enhancement measures within the site suitable for reptiles,

The Environment Act (Wales) 2016 places a duty on competent authorities such as Merthyr Tydfil County Borough Council to conserve and enhance biodiversity. Enhancement measures which improve the current biodiversity levels of the site will be required within any future development proposals. **Enhancement measures must be over and above measures proposed to compensate for any direct habitat and species impacts.** Some enhancement measures that will need to be considered are:

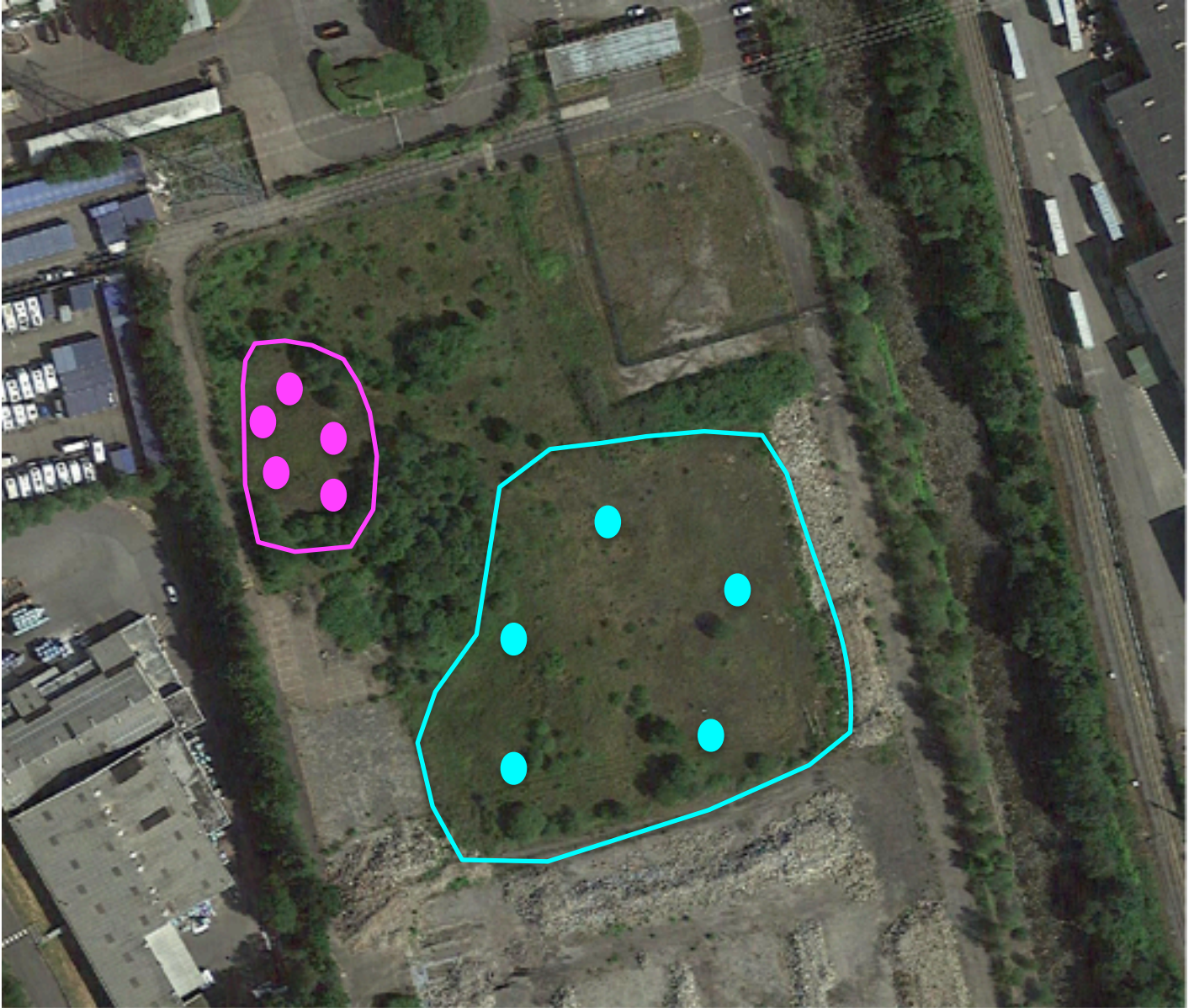
- The provision of bat and bird boxes within any new properties created on site.

- Soft landscaping to be incorporated into the design which uses native species. Soft landscaping can provide a food source for birds and insects and create habitat connectivity across the site.
- Site design to protect and enhance the riparian corer of the River Taff and River Taff SINC. A buffer between the development and river with no housing or lit roads would be welcome. Enhancement planting of the river corridor and treatment of Japanese Knotweed would also be welcome.
- A wildlife friendly lighting plan will be required for the proposed development site. all lighting must meet recommendations in the BCT Guidance Note 08/18 Bats and artificial lighting in the UK document <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

Appendix 1 - Site Photographs



Appendix 2 - Quadrat Locations



Approximate Location of Grassland Quadrats



Approximate Location of Wetland Quadrats

Appendix 3 – Species List

3 <Grassland Dragon Parc 4>

3 9201210 0 *Lychnis flos-cuculi* 10
3 920983 0 *Holcus lanatus* 5
3 92035 0 *Agrostis canina* sens.lat. 5
3 9201070 0 *Juncus inflexus* 25
3 920400 0 *Carex panicea* 33
3 920381 0 *Carex hirta* 1
3 9201899 0 *Senecio jacobaea* 1
3 920520 0 *Cirsium palustre* 1
3 920824 0 *Festuca rubra* agg. 1
3 9201507 0 *Poa trivialis* 7
3 920877 0 *Galium mollugo* subsp.erectum 5
3 9201660 0 *Ranunculus repens* 10
3 920169 0 *Arrhenatherum elatius* 1
3 920608 0 *Dactylorhiza fuchsii* 1
3 9204528 100424 *Dactylorhiza hybrids* 1
3 9201054 0 *Juncus articulatus* 10
3 9201651 0 *Ranunculus flammula* 10
3 920763 0 *Eupatorium cannabinum* 10
3 9201584 0 *Potentilla anserina* 10
3 9201273 0 *Mentha arvensis* 2
3 9201319 0 *Myosotis laxa* 1
3 920697 0 *Epilobium palustre* 1

0 <Grassland Dragon Parc 1>

0 9201210 0 *Lychnis flos-cuculi* 4
0 920121 0 *Anthoxanthum odoratum* 4
0 920983 0 *Holcus lanatus* 10
0 92035 0 *Agrostis canina* sens.lat. 1
0 9201070 0 *Juncus inflexus* 25
0 920400 0 *Carex panicea* 2
0 920397 0 *Carex ovalis* 2
0 920467 0 *Cerastium fontanum* 1
0 9201191 0 *Lotus corniculatus* 30
0 9202091 0 *Trifolium pratense* 2
0 9201610 0 *Prunella vulgaris* 3
0 9201594 0 *Potentilla reptans* 10
0 9201642 0 *Ranunculus acris* 1
0 920381 0 *Carex hirta* 1
0 9201899 0 *Senecio jacobaea* 1
0 920444 0 *Centaurea nigra* 2
0 9204528 100424 *Dactylorhiza hybrids* 2
0 9202092 0 *Trifolium repens* 1
0 9201016 0 *Hypericum tetrapterum* 2
0 920520 0 *Cirsium palustre* 1

0 9201734 0 *Rumex acetosa* 1
0 920824 0 *Festuca rubra* agg. 1
0 9202191 0 *Vicia hirsuta* 1
0 920692 0 *Epilobium hirsutum* 1
0 920882 0 *Galium palustre* 7
0 9201507 0 *Poa trivialis* 7
0 9201660 0 *Ranunculus repens* 1
0 9202247 0 *Phleum pratense* sens.lat. 1
0 9201194 0 *Lotus pedunculatus* 2
0 920169 0 *Arrhenatherum elatius* 1
0 9201067 0 *Juncus effusus* 10

1 <Grassland Dragon Parc 2>

1 9201210 0 *Lychnis flos-cuculi* 10
1 920983 0 *Holcus lanatus* 10
1 920121 0 *Anthoxanthum odoratum* 1
1 92035 0 *Agrostis canina* sens.lat. 1
1 9201070 0 *Juncus inflexus* 3
1 920400 0 *Carex panicea* 10
1 9201487 0 *Plantago lanceolata* 10
1 920467 0 *Cerastium fontanum* 1
1 9201191 0 *Lotus corniculatus* 3
1 9201610 0 *Prunella vulgaris* 2
1 9201642 0 *Ranunculus acris* 1
1 920381 0 *Carex hirta* 10
1 920444 0 *Centaurea nigra* 1
1 9204528 100424 *Dactylorhiza hybrids* 1
1 9201016 0 *Hypericum tetrapterum* 1
1 920520 0 *Cirsium palustre* 1
1 9201734 0 *Rumex acetosa* 1
1 920824 0 *Festuca rubra* agg. 1
1 920692 0 *Epilobium hirsutum* 2
1 9201507 0 *Poa trivialis* 1
1 920882 0 *Galium palustre* 2
1 9201660 0 *Ranunculus repens* 2
1 9201194 0 *Lotus pedunculatus* 10
1 920169 0 *Arrhenatherum elatius* 1
1 920838 0 *Fragaria vesca* 10
1 9201728 100216 *Rubus fruticosus* agg. 10
1 920907 0 *Geranium dissectum* 1
1 9202189 0 *Vicia cracca* 1
1 920328 0 *Cardamine flexuosa* 1
1 920396 0 *Carex otrubae* 1
1 920608 0 *Dactylorhiza fuchsii* 1
1 920609 0 *Dactylorhiza incarnata* 1

1 9201067 0 Juncus effusus 7

2 <Grassland Dragon Parc 3>

2 9201210 0 Lychnis flos-cuculi 10

2 920983 0 Holcus lanatus 2

2 920121 0 Anthoxanthum odoratum 10

2 9201070 0 Juncus inflexus 3

2 9201487 0 Plantago lanceolata 1

2 920467 0 Cerastium fontanum 2

2 9201191 0 Lotus corniculatus 1

2 9201642 0 Ranunculus acris 1

2 920381 0 Carex hirta 10

2 920444 0 Centaurea nigra 2

2 920824 0 Festuca rubra agg. 2

2 920692 0 Epilobium hirsutum 1

2 9201507 0 Poa trivialis 7

2 920882 0 Galium palustre 1

2 9201660 0 Ranunculus repens 2

2 9201194 0 Lotus pedunculatus 7

2 920907 0 Geranium dissectum 1

2 920331 100065 Cardamine pratensis 2

2 920608 0 Dactylorhiza fuchsii 1

2 920597 0 Cynosurus cristatus 2

2 9201054 0 Juncus articulatus 2

2 920675 0 Eleocharis palustris 1

2 9201323 0 Myosotis secunda 1

2 9201651 0 Ranunculus flammula 5

4 9201067 0 Juncus effusus 1

8 <Wetland Dragon Parc 4>

8 9202110 0 Typha angustifolia 7

8 920882 0 Galium palustre 10

8 9201272 0 Mentha aquatica 10

8 9201651 0 Ranunculus flammula 1

8 920608 0 Dactylorhiza fuchsii 1

8 920697 0 Epilobium palustre 5

8 9202179 0 Veronica scutellata 7

8 920740 0 Eriophorum angustifolium 25

9 <Wetland Dragon Parc 5>

9 9202110 0 Typha angustifolia 25

9 920424 0 Carex vesicaria 10

9 920882 0 Galium palustre 10

9 9201272 0 Mentha aquatica 10

9 9201651 0 Ranunculus flammula 1

9 9201194 0 Lotus pedunculatus 1

9 920697 0 Epilobium palustre 5

9 9202179 0 Veronica scutellata 5

2 92039 0 Agrostis stolonifera 7

2 920697 0 Epilobium palustre 1

2 9201067 0 Juncus effusus 1

4 <Grassland Dragon Parc 5>

4 9201210 0 Lychnis flos-cuculi 7

4 920983 0 Holcus lanatus 1

4 92035 0 Agrostis canina sens.lat. 1

4 9201070 0 Juncus inflexus 75

4 9201487 0 Plantago lanceolata 1

4 920381 0 Carex hirta 1

4 9201899 0 Senecio jacobaea 1

4 920444 0 Centaurea nigra 7

4 920520 0 Cirsium palustre 1

4 9201734 0 Rumex acetosa 1

4 920824 0 Festuca rubra agg. 1

4 9201507 0 Poa trivialis 1

4 920882 0 Galium palustre 5

4 9201660 0 Ranunculus repens 7

4 9201194 0 Lotus pedunculatus 10

4 920331 100065 Cardamine pratensis 5

4 920608 0 Dactylorhiza fuchsii 1

4 9201054 0 Juncus articulatus 10

4 920763 0 Eupatorium cannabinum 1

4 9201273 0 Mentha arvensis 7

4 9201319 0 Myosotis laxa 1

4 920697 0 Epilobium palustre 1

9 920740 0 Eriophorum angustifolium 5

9 9204528 100424 Dactylorhiza hybrids 1

5 <wetland Dragon Parc 1>

5 9202110 0 Typha angustifolia 7

5 920424 0 Carex vesicaria 10

5 920393 0 Carex nigra 7

5 9201067 0 Juncus effusus 1

5 920882 0 Galium palustre 7

5 9201272 0 Mentha aquatica 10

5 9201054 0 Juncus articulatus 10

5 9201194 0 Lotus pedunculatus 5

5 920608 0 Dactylorhiza fuchsii 1

5 9201660 0 Ranunculus repens 1

5 9202179 0 Veronica scutellata 7

5 9201651 0 Ranunculus flammula 10

6 <Wetland Dragon Parc 2>

6 9202110 0 Typha angustifolia 1

6 920424 0 Carex vesicaria 25

6 920393 0 Carex nigra 1
6 920882 0 Galium palustre 5
6 9201272 0 Mentha aquatica 7
6 9201054 0 Juncus articulatus 5
6 9201194 0 Lotus pedunculatus 1
6 920608 0 Dactylorhiza fuchsii 1
6 920400 0 Carex panicea 1
6 9201070 0 Juncus inflexus 5
6 920697 0 Epilobium palustre 1
6 9202179 0 Veronica scutellata 5
6 9201610 0 Prunella vulgaris 1
6 920763 0 Eupatorium cannabinum 1
6 920520 0 Cirsium palustre 1
6 920740 0 Eriophorum angustifolium 1
6 9201651 0 Ranunculus flammula 10
7 <Wetland Dragon Parc 3>
7 9202110 0 Typha angustifolia 5
7 920882 0 Galium palustre 1
7 9201272 0 Mentha aquatica 10
7 9201054 0 Juncus articulatus 7
7 920608 0 Dactylorhiza fuchsii 1
7 920697 0 Epilobium palustre 1
7 9202179 0 Veronica scutellata 7
7 920740 0 Eriophorum angustifolium 10
7 9201899 0 Senecio jacobaea 1
7 9202092 0 Trifolium repens 1
7 9201625 0 Pulicaria dysenterica 5
7 920370 0 Carex echinata 5
7 9201651 0 Ranunculus flammula 10
G0 9201210 0 Lychnis flos-cuculi 5
G0 920121 0 Anthoxanthum odoratum 3
G0 920983 0 Holcus lanatus 5
G0 92035 0 Agrostis canina sens.lat. 4
G0 9201070 0 Juncus inflexus 5
G0 920400 0 Carex panicea 3
G0 920397 0 Carex ovalis 1
G0 920467 0 Cerastium fontanum 3
G0 9201191 0 Lotus corniculatus 3
G0 9202091 0 Trifolium pratense 1
G0 9201610 0 Prunella vulgaris 2
G0 9201594 0 Potentilla reptans 1
G0 9201642 0 Ranunculus acris 3
G0 920381 0 Carex hirta 5
G0 9201899 0 Senecio jacobaea 3
G0 920444 0 Centaurea nigra 4
G0 9204528 100424 Dactylorhiza hybrids 3

G0 9202092 0 Trifolium repens 1
G0 9201016 0 Hypericum tetrapterum 2
G0 920520 0 Cirsium palustre 4
G0 9201734 0 Rumex acetosa 3
G0 920824 0 Festuca rubra agg. 5
G0 9202191 0 Vicia hirsuta 1
G0 920692 0 Epilobium hirsutum 3
G0 920882 0 Galium palustre 4
G0 9201507 0 Poa trivialis 5
G0 9201660 0 Ranunculus repens 5
G0 9202247 0 Phleum pratense sens.lat. 1
G0 9201194 0 Lotus pedunculatus 4
G0 920169 0 Arrhenatherum elatius 3
G0 9201487 0 Plantago lanceolata 3
G0 920838 0 Fragaria vesca 1
G0 9201728 100216 Rubus fruticosus agg. 1
G0 920907 0 Geranium dissectum 2
G0 9202189 0 Vicia cracca 1
G0 920328 0 Cardamine flexuosa 1
G0 920396 0 Carex otrubae 1
G0 920608 0 Dactylorhiza fuchsii 4
G0 920609 0 Dactylorhiza incarnata 1
G0 920331 100065 Cardamine pratensis 2
G0 920597 0 Cynosurus cristatus 1
G0 9201054 0 Juncus articulatus 3
G0 920675 0 Eleocharis palustris 1
G0 9201323 0 Myosotis secunda 1
G0 9201651 0 Ranunculus flammula 2
G0 92039 0 Agrostis stolonifera 1
G0 920697 0 Epilobium palustre 3
G0 920877 0 Galium mollugo subsp.erectum 1
G0 920763 0 Eupatorium cannabinum 2
G0 9201584 0 Potentilla anserina 1
G0 9201273 0 Mentha arvensis 2
G0 9201319 0 Myosotis laxa 2
G1 <wetland>
G1 9202110 0 Typha angustifolia 5
G1 920424 0 Carex vesicaria 3
G1 920393 0 Carex nigra 2
G1 9201067 0 Juncus effusus 1
G1 920882 0 Galium palustre 5
G1 9201272 0 Mentha aquatica 5
G1 9201054 0 Juncus articulatus 3
G1 9201194 0 Lotus pedunculatus 3
G1 920608 0 Dactylorhiza fuchsii 4
G1 9201660 0 Ranunculus repens 1

G1 9202179 0 Veronica scutellata 5

G1 9201651 0 Ranunculus flammula 5

G1 920400 0 Carex panicea 1

G1 9201070 0 Juncus inflexus 1

G1 920697 0 Epilobium palustre 4

G1 9201610 0 Prunella vulgaris 1

G1 920763 0 Eupatorium cannabinum 1

G1 920520 0 Cirsium palustre 1

G1 920740 0 Eriophorum angustifolium 4

G1 9201899 0 Senecio jacobaea 1

G1 9202092 0 Trifolium repens 1

G1 9201625 0 Pulicaria dysenterica 1

G1 920370 0 Carex echinata 1

G1 9204528 100424 Dactylorhiza hybrids 1

Appendix 4 - Reptile Refugia Locations

LAND AT DRAGON PARC, ABERCAINAID
MERTHYR TYDFIL

Reptile Refugia Survey

September 2021



Appendix 5 - Reptile Survey Results

Date	Conditions	Results	Comments
27/08/2021			72 Refugia set out across site
09/09/2021	15.7°C, full cloud cover, dry and calm	-	Damp ground
11/09/2021	17°C, approximately 20% cloud cover, dry and calm, sunny	-	-
14/09/2021	17°C, approximately 60% cloud cover, dry	-	-
16/09/2021	21°C, 100% cloud cover, foggy	-	-
19/09/2021	13°C, 75% cloud cover, dry with a slight breeze	-	Damp ground and sun just coming out
24/09/2021	18°C, approximately 70% cloud cover, dry and calm	-	Damp ground
29/09/2021	17.6°C, approximately 20% cloud cover, sunny,	-	Damp ground
01/10/2021		-	Additional check while collecting mats