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**GRASSLAND ASSESSMENT AND PROTECTED
SPECIES SURVEYS, GWYNFAEN PHASE 2,
GOWERTON.**

On behalf of

POBL

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Issue 3

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All habitat and protected species surveys present a ‘snapshot’ of conditions existing and species present, or considered having potential to be present, at the time of survey. Many species are mobile and distributions can vary across time. Results and findings presented in this report should be considered with these factors in mind.

Protected species surveys are recognised as having a ‘shelf life’ of two years maximum in normal circumstances. Surveys older than this are unlikely to be accepted by a Local Planning Authority or Natural Resources Wales as viable documentation without just cause or reason.

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SUMMARY

Following a Preliminary Ecological Appraisal (PEA) carried out by Hawkeswood Ecology in January 2024 and subsequent informal consultation with Swansea Local Planning Authority Ecologists, Hawkeswood Ecology was instructed to carry out an updated grassland habitat assessment and protected species surveys on land at Gwynfaen Farm, Gorseinon. In addition, the Site was assessed for use by badgers and birds through the survey period. It is proposed to develop the Site for residential purposes.

The initial PEA was undertaken in January 2024 and found the Site to be dominated by a field of species poor semi-improved grassland which is sheep grazed. There are former hedgerow boundaries to the majority of the Site which are unmanaged and generally trending towards rows of mature trees; shrub species are infrequent. Recommendations were made for further surveys for bat activity, assessment of tree roost potential for bats and a presence – absence survey for reptiles. Sheep have since been removed from the Site and apart from infrequent break-ins the Site has not been grazed in 2024.

These surveys were undertaken during 2024 by Hawkeswood Ecology using methodologies detailed within the report reflecting current best practice at the time of survey.

The grassland survey consisted of a walk over assessment noting any species present and then categorising the type and value of it. The protected species surveys involved a Ground Level Tree Assessment (GLTA) for bat roosting potential and activity surveys for bats and a presence – absence survey for reptiles. Adventitious records of birds and other species were made throughout the survey period and any badger activity was noted.

The grassland assessment found the Site to support recovering modified grassland. Although containing species typical of marshy grassland, it is considered to be best described as poor semi-improved and is dominated by grass species such as crested dog's-tail and perennial rye-grass along with soft rush in wetter areas. With time and proper management the grassland could recover to marshy grassland.

The bat transect surveys noted limited activity over the Site with common pipistrelle the most commonly recorded species. Myotis species bats were noted frequently along the northern boundary of the Site and soprano pipistrelle occurred frequently but with less regularity. In July rare passes by greater horseshoe bats were recorded at both passive detector locations.

The GLTA was limited to trees affected by the development or proposed management, the majority of the Sites wooded boundaries are to be fully retained. Five trees or groups of trees were assessed of which none were assessed as having medium or high potential to support roosting bats.

The reptile survey found low numbers of slow worms present at only two locations through the survey with only one of three mats used on more than one occasion. A

further adventitious record was made following ‘topping’ of the Site in August at a new location. All animals noted were females. Recommendations are made for movement and translocation of slow worms.

Adventitious bird sightings were of typical woodland and urban species with no birds identified associated with the adjacent Special Protection Area. No proven evidence of badgers was found on Site. There were some paths noted over the year but fox was seen on occasion and could be responsible. No setts, scrapes or latrines evidencing badger activity were found.

The conclusions of this report are considered valid for three years in terms of grassland assessment and two years for protected species from the survey dates noted in Section 1 of the report.

1 INTRODUCTION

- 1.1 Following earlier Preliminary Ecological Appraisal (PEA) undertaken by Hawkeswood Ecology (HE) in January 2024, HE were further instructed to undertake recommended follow up surveys at Gwynfaen Farm, Gorseinon. The Site lies at approximate central Grid reference SS 577 993 and lies on the northwestern boundary edge of the Gorseinon conurbation. It is proposed to develop the Site for residential purposes as Phase 2 of the Gwynfaen Development, Phase 1 is currently under construction immediately to the east of this Site. The Hawkeswood Ecology PEA, '*Preliminary Ecological Appraisal, Gwynfaen Phase 2, Gorseinon. Hawkeswood Ecology – February 2024*' should be read in conjunction with this report.
- 1.2 Hawkeswood Ecology reported the Site as grazed by sheep and is heavily disturbed by foul drainage works with the routes of pipes and underground tanks obvious in the landscape. The grassland is best described as poor semi-improved although showing some reversion to a marshy grassland with some typical marshy grassland species present in the sward although rarely at a high frequency; gorse is present across parts of the sward. It is bounded by unmanaged hedgerows on all sides which have become largely rows of trees or narrow wooded belts.
- 1.3 Given the early time the PEA was undertaken, recommendations for further survey included an updated walk over of the grassland at an appropriate time of year. The recommendation made for further survey were that the Site should be subject to the following species surveys:
- To undertake an in-season assessment of the grassland;
 - To assess the use of the Site by foraging bats;
 - To carry out ground based Ground Level Tree Assessment (GLTA) of any trees affected by the development in relation to their potential for use by roosting bats;
 - To undertake a reptile presence – absence survey.
 - To provide an overview through the survey period of use of the Site by birds and badgers in particular;
 - To provide recommendations for further survey or mitigation proposals to safeguard any protected species found.
- 1.4 In addition other recommendations were made which are made should planning permission be granted and the development proceed. These were not undertaken in this survey although any activity of badgers on the Site was looked for throughout the survey.
- Pre-commencement search for use of stream and wider Site by otter and badger;
 - Although not planned, should the hedgerow at TN9 be removed a Hedgerows Regulations Assessment may be required.
- 1.5 The Site is adjacent to a Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI) cited for being internationally and nationally important for wading birds and waterfowl. As such, use of the Site by birds was noted throughout the survey period.

- 1.6 The grassland assessment was undertaken on 10th June 2024 with adventitious records made throughout the survey period.
- 1.7 Bat surveys commenced in May 2024 and are currently on-going. Interim results of the surveys are given in this report with an Addendum to be prepared following completion of survey in October.
- 1.8 The reptile survey was undertaken over the period of 24th April to 27th August 2024 with the mats laid out on 4th March 2024.

2. METHODOLOGY

Grassland Assessment

- 2.1 The assessment consisted of a walk over survey, covering all areas of the grassland species were identified and their abundance noted using the DAFOR abundance scale.

Bats - Activity

- 2.2 Activity surveys were based upon recommendations made in the Bat Conservation Trust Document ‘*Bat Surveys, Good Practice Guidelines for Professional Ecologist, 2023*’. Three transect visits to Site were planned of which two have been completed at the time of writing, these were carried out on 25th May and 24th July 2024 with the final transect for late September/early October. Each transect consisted of a static phase watching the tree lines to assess how bats entered and used the Site for between 45 – 60 minutes followed by a walked transect with stops of approximately 5 minutes at locations shown in Figure 1. Passive detectors were located across the Site and left in place on a monthly basis from May to October, to date they have been on Site up to August with one or possibly two further sessions planned.
- 2.3 Passive detectors were placed at locations shown in Figure 2 on a monthly basis. Passive detecting machines used were Anabat Express machines (zero-crossing and Full Spectrum) which were set to record on a pre-determined schedule allowing at least 15 minutes before sunset to at least 15 minutes after sunrise. The machines were placed in or adjacent to the wooded boundaries of the Site. At this stage, there are at least two, possibly three, further sessions to take place.
- 2.4 Anabat Scout machines were used for the transect survey. Anabat Express and Anabat Express full spectrum machines were used for the passive surveys. These machines continually record, the recordings available for later analysis. The recordings were analysed using Anabat Insight software, by use of which it is possible to separate most species present from the sonograms produced.

Bats – Trees, Preliminary Roost Assessment

- 2.5 A ground level visual inspection was carried out from the ground using binoculars. The use of ladders was limited but assisted along with the use of an endoscope where safe and feasible. The inspection looked for features on the trees that could be used by bats for roosting and shelter.

2.6 The approximate location of each tree/group of trees assessed is shown in Figure 4 and the surveyor noted species, presence of ivy, presence cavities, holes or other suitable crevices for bats to roost within, or presence of dead wood which may indicate some level of roosting opportunity and attributed an appropriate risk category. The trees are referred to in this document by the numbers associated with them in the previously undertaken arboricultural Survey where possible (some trees or groups of trees where tags were not found or the survey requirement differed have been given numbers by Hawkeswood Ecology). The bat roost potential categories are presented in Table 1 below.

Table 1: Risk Assessment features for bat-roost potential during tree inspection (After *Bat Surveys for Professional Ecologists- Good Practice Guidelines*’ –Bat Conservation Trust 2016):

Suitability	Roosting	Commuting/Foraging Habitats
Negligible potential	No features likely to be used by roosting bats.	Negligible habitat Features likely to be used by commuting or foraging bats.
Low	Trees with no obvious PRF's to support bats although the size and age may result in limited features that may support bats or only limited features noted in inspection	Suitable habitat but isolated, may be used by small numbers of bats; i.e. isolated tree, small patch of scrub.
Medium	A Tree with one or more PRF's that could be used by bats due to their size, shelter, protection conditions and surrounding habitat but unlikely to support a roost of high conservation status.	Habitat connected to the wider landscape such as trees, water, grassland or scrub.
High	A tree with one or more PRF's that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to size, shelter, protection, conditions and surrounding habitat.	Continuous high-quality habitat connected to the wider landscape likely to be used regularly by commuting and foraging bats. A site near to known roosts.

Notes: PRF's – Potential Roost Features

- 2.7 Evidence such as bat droppings (faeces) was looked for in holes where possible and at the base of the trees, and any holes also examined for urine or fur staining typically found at the access points.
- 2.8 The daytime inspection was carried out with the aid of close focusing binoculars, endoscope, ladders and a 1,000,000 candlepower spot lamp.

Reptiles

- 2.9 The reptile presence/absence survey was carried out in accordance with guidelines given in *The Herpetofauna Worker’s Manual* (JNCC, 2003) and *Froglife Advice Sheet no. 10*,

‘Reptile Survey, an introduction to planning, conducting and interpreting surveys for snake and lizard conservation.’ (1999).

- 2.10 Felt mats were used as refugia and placed into position on 4th March 2024. The refugia were visited on seven occasions in suitable weather conditions as described in the referenced published guidance, from 24th April to 27th August 2024. In addition, ad hoc checks were made on mats and any suitable refugia on Site on various visits. These are not included in the data but are discussed in Section 6. Appendix 1, courtesy of Chris Gleed-Owen, demonstrates suitable weather conditions and timing for survey throughout the reptilian activity period of March to October.
- 2.11 A total of 70 refugia were used across suitable areas of the Site; any other potential refugia, either natural or from dumped materials near the Site boundary, were also checked. Approximate locations of the placed refugia are shown in Figure 5. The refugia were placed across the Site, including open grassland areas but focussed on dense growth, the Site boundaries and areas of developing gorse scrub. The refugia were placed whenever possible in locations that would warm up in the sun and provide a favourable place for reptiles to warm up under or bask upon at some point during the day.
- 2.12 The total survey area was approximately 3.5 hectares, on flat ground and a west facing slope. The Froglife guidelines suggest placing 5-10 refugia per hectare for adequate survey. The density of as minimum of 70 refugia used over an area of approximately 3.5 hectares at this Site gives a density of approximately 20 refugia per hectare. Using a higher number of refugia than the recommendation plus the longer survey period increased the chances of finding any animals present.

Constraints

Bats

- 2.13 The use of passive detectors gives a tremendous amount of data but this is based on a fixed point and relates not to individual animals but to passes by bats. In addition, some bats, i.e. brown long-eared bats, have very quiet calls. This must be borne in mind during analysis of bat usage across the Site. Also, there are known difficulties in labelling *Myotis* species calls. Where identified in this report the conclusion is based on call characteristics being most similar to the species apportioned and assessed by the surveyor even if auto-ID analysis was used. If there is not enough information, the bat is described simply as a ‘*Myotis*’ species.
- 2.14 During the August passive detector survey the machine on the southern hedgerow failed after three nights. Full data was gained for those three night and it is not considered the failure has compromised the survey outcomes.

Reptiles

- 2.15 Following the first survey visit a number of mats were removed and used to aid construction of a children’s den! The mats were recovered and replaced in different locations which meant an area of the Site in the north west being less covered than

originally hoped for. The very wet nature of this area probably lessens the presence of reptiles here, it was considered to be too wet for most species apart from grass snake. The mats were relocated to less visible areas for the safety of any reptiles beneath them. No repetition of this disturbance occurred.

Birds and badgers

- 2.16 Dedicated breeding bird and badger survey was not undertaken. An assessment of the Site in relation to breeding birds and badger was made and ad-hoc records of species noted during the many field visits made and findings are given in the report text.

3. SURVEY TEAM EXPERIENCE

- 3.1 The lead surveyor and report author is Eric Hawkeswood. Eric has many years experience of broad habitat and detailed botanical and species surveying. Eric has been an active member of the Brecknock Bat Group since 1999 and been involved in a number of long running surveys within the county. He is a Natural Resources Wales (NRW) licensed bat worker (no. S092015-1, 2023) and has extensive experience of roost inspections and emergence work. He has been a professional in the nature conservation field for thirty five years formerly working as Reserves Manager and Conservation Officer at Gwent Wildlife Trust and Woodland Manager for the Ruperra Conservation Trust. Eric has worked as an Ecological Consultant as joint proprietor of Hawkeswood Ecology since 2001.
- 3.2 Assistant surveyors on the bat transect surveys were Liam Kelly and David Norton. Liam has worked with Hawkeswood Ecology since 2012 and David since 2019, both have extensive experience of emergence/re-entry and activity surveys.

4 DESKTOP STUDY

- 4.1 A desktop survey was undertaken by Hawkeswood Ecology and is reported fully in the January 2024 PEA.
- 4.2 Within 500 metres of the Site relevant records reported include common and soprano pipistrelle, brown long-eared, whiskered, Natterer's and noctule bats. Reptiles reported are common lizard, slow worm and grass snake.
- 4.3 From up to 2 kilometres from the Site, Nathusius pipistrelle, lesser horseshoe and greater horseshoe bats are recorded.
- 4.4 A Preliminary Ecological Appraisal was undertaken by Thompson Ecology in 2020 covering the wider Gwynfaen Farm found the current application Site to be agriculturally modified grassland. It also reported two badger setts approximately 250 metres north of the Site.

5 FIELD SURVEY

Grassland Assessment

- 5.1 The initial habitat assessment made in January 2024 considered the Site to be dominated by agriculturally modified grassland. At the time of survey it was sheep grazed but had also previously been horse grazed over the summer period. Whilst clearly affected by improvement and modification a number of broad leaved herbs, rush and sedge species were noted and a later in-season survey was recommended to properly assess its value.
- 5.2 The in season assessment took place on 10th June 2024 in fine weather conditions. The initial findings that the grassland had been agriculturally modified were confirmed with the Site largely dominated by grass species with abundant perennial rye-grass, crested dog's tail, timothy and Yorkshire fog. Grass species dominated large parts of the Site with other species noted including annual meadow grass, sweet floating-grass, meadow foxtail, sweet vernal grass and rough meadow grass present, occasionally locally abundant. The grassland was split into three areas (see Figure 1) which showed relatively distinctive characteristics, these are described in detail in the Target Notes.
- 5.3 At Target Note 1, grass species were dominant across most of the area with abundant glaucous sedge cover along a drainage easement is laid across the Site was along with frequent hairy sedge and oval sedge, these species appearing occasionally through the rest of the Site. Rushes present include occasional to locally frequent soft rush, compact rush and jointed rush; hard rush and slender rush occurred rarely.
- 5.4 Broad leaved herbs included lesser spearwort, creeping buttercup and common fleabane. Red clover, lesser trefoil, meadow buttercup, spear thistle, common cat's-ear, curled dock and bird's-foot trefoil also occurred rarely through the sward. A full species list is given in Appendix 2.
- 5.5 At Target Note 2, there is an open naturally regenerated woodland canopy consisting of mainly goat willow with occasional oak and ash. This area was very wet throughout the survey period, with occasional standing water in places. Floating sweet-grass was locally abundant as were creeping buttercup. Yorkshire fog, meadow foxtail and sweet vernal grass were frequent or locally frequent and remote sedge occasional. Other species noted included marsh ragwort, lesser spearwort, enchanter's nightshade, meadow buttercup, hemlock water dropwort, marsh thistle, common marsh bedstraw and broad buckler fern occurring occasionally or rarely in the sward.
- 5.6 Target Note 3 lies on a west facing slope and was wet throughout the survey period. the flora is dominated by soft rush, with abundant Yorkshire fog, floating sweet grass is locally abundant and crested dog's tail and creeping bent are frequent. Jointed rush and compact rush are locally frequent. Other species recorded include locally frequent lesser spearwort and occasional marsh ragwort.
- 5.7 Adventitious species occurring through the survey period included occasionally occurring lady's smock, frequent ragwort, rough hawkbit and rarely occurring square-stemmed St John's-wort and marsh woundwort.

Bats – Ground Level Tree Assessment

- 5.8 The majority of trees are being retained; removal of a small number of trees and groups of trees is necessary to facilitate development. Of these none were considered to be of high or medium potential to support roosting bats with only the willows in G9 and G10 supporting shallow cavities and cracks in the bark. The assessment outcome is given in Table 2 below.
- 5.9 The untagged goat willow (A1) is a tree that has previously been managed, presumably to repair fencing after collapsing. The majority of regrowth is good condition, some bark scarring is noted on older growth which could potentially offer limited opportunistic roosting potential, no direct evidence was found.
- 5.10 The two groups of goat willow consist of young but established trees, both groups showing some cracks around 1.5 metres height possibly as a result of browsing by ponies. Again, there is limited potential for opportunistic roosting but no direct evidence of use by bats was found.

Grassland Assessment and Protected Species Surveys, Gwynfaen Phase 2.
Hawkeswood Ecology – September 2024

Table 2: Assessment of Bat Roost Potential in Trees on Site:

Tree no	Species	Ivy	Cavities	Dead Wood	Approx height (m)	Bat presence / Recommendations	Roost potential
T8	Common oak	N	None visible	None significant.	10	Young mature tree showing no cavities or cracks. No opportunities.	Negligible
A1	Goat willow	N	Slight scaring	No	9	Un-tagged collapsed goat willow which has previously been cut back. Regrowth is largely young poles in good condition. Some bark scars may offer opportunistic potential but unlikely. Check before removal if necessary.	Low
G9	Goat willow	N	Showing some shallow crevices at around 1.5m, all around stems.	No	8	Group of established young goat willow with shallow crevices present, no deep cavities allowing access to tree interiors present, young growth above in good condition. Limited potential for opportunistic roosting. Check before removal.	Low
G9a	Common oak	N	No	No	8	Young tree growing on edge of G9. In good condition with no roosting opportunities. between 1812 and 1813, no PRFs	Negligible
G10	Goat willow	N	Shallow cavities	Small branches	8	Similar to G9, all cavities shallow and again at around 1.5m. Check before removal.	Low

Bats – Activity Survey

- 5.11 The bat activity survey consisted of both walked transects and the use of passive detectors left in the field for a minimum of 5 nights. Bat activity surveys are currently ongoing, currently walked transects have been carried out in May and July and passive detectors have been located on Site in May, June and July. A further transect will be undertaken in September and passive detectors placed on Site in September and possibly October.
- 5.12 Table 3 below shows the conditions at the time of the transect surveys and Table 4 shows the temperatures and general conditions over the passive detector survey periods to date. Figure 2 shows the transect route.

Table 3: Weather conditions for survey:

Date	Survey type	Times	Weather conditions
25 th May 2024	Evening activity	21.00 – 23.15 (sunset 21.15)	17-15°C, high cloud to 90% cover, good visibility, F1-2 SW breeze.
23 rd July 2024	Evening activity	21.15 - 23.30 (sunset 21.34)	18-18°C, variable high cloud cover to 70%, dry, good visibility, Still.

Table 4: Conditions over passive detector periods:

Date	Temp °C range low to high and predicted weather
May 17th – 23rd	Light winds predominantly from the north or north east with occasional south westerly. Dry with mainly sunny weather, occasional cloudy spells.
17/05/24	
18/05/24	
19/05/24	
20/05/24	
21/05/24	
22/05/24	
June 15th – 20th	Winds in the south west for 15 th and 16 th swinging to the north then north east, Force 6 on 15 th decreasing to Force 2 to 3 for rest of survey period. Mainly dry with cloudy spells.
15/06/24	
16/06/24	
17/06/24	
18/06/24	
19/06/24	
July 22nd – 28th	Winds mainly in the west or south west, between F1 and Force 4 through the period. Some rain, occasionally heavy, also dry spells with clear skies.
22/07/24	
23/07/24	
24/07/24	
25/07/24	

26/07/24	16-12	
27/07/24	17-11	
August 27th – Sept 1st		
27/08/24	18-15	Winds mainly in the south swing to easterly, strong winds (F5) decreasing to F2-F3. Rain at survey commencement, becoming dry with breaks in cloud from 28 th August.
28/08/24	18-14	
29/08/24	17-8	
30/08/24	19-13	
31/08/24	21-16	

Bats - Transect Survey Summary

25th May 2024

- 5.13 The first bat recorded was a soprano pipistrelle flying into the southern hedge from housing to the south at 21.20. From this point there was foraging of soprano pipistrelle with regular passes until a common pipistrelle was recorded at 21.30. The first bat noted on the northern hedge line was a soprano pipistrelle recorded at 21.45, this bat appearing to travel from the west. From this point until commencing the walked transect around the Site foraging soprano and common pipistrelle were frequent with occasional gaps between recordings.
- 5.14 Commencing the transect at 22.00 EH walked from the northern hedge to the east and around a circuit of the Site. The transect concluded walking across the centre of the field carried out to assess any activity across the Site after darkness fell.
- 5.15 The first five minute stop (22.18) was by the eastern hedgerow adjacent to the Phase 1 build. Only occasional foraging of a common pipistrelle along this hedge was noted. The second stop (22.32) was at the south east corner of the Site near the adjacent road. Here, foraging common pipistrelle was recorded, a single bat seen in the streetlights until 22.37.
- 5.16 The third stop at 22.44 was near the western end of the northern hedge near Gwynfaen Farm, both soprano and common pipistrelle recorded occasionally. At 22.55 the fourth stop was at the west of the Site just east of the farm with only occasional foraging common pipistrelle recorded. The final stop was in the approximate centre of the Site at 22.05 when only noctule was recorded flying overhead.
- 5.17 In summary, early on there was an influx of soprano pipistrelle to the southern hedgerow with most early activity centred in this area. Activity became less as the survey wore on with limited and irregular activity later on. Other species recorded during the transect were rarely recorded distant *Myotis* species bats and noctule.

23rd July 2024

- 5.18 The first bat recorded was a common pipistrelle flying from the direction of Gwynfaen Farm along the northern hedge towards the Phase 1 Build area at 21.24. Further common pipistrelle were noted following this path but were seen to be flying from the farm on the

eastern side of the hedgerow whilst still light. The first bat recorded on the southern hedgerow was an unseen common pipistrelle. Following this both observers had regular foraging to around 21.50 when foraging became sporadic, common pipistrelle appearing to be the most frequently occurring species on this occasion.

- 5.19 Before the walked transect commenced common pipistrelle were noted foraging around the open woodland area and into the Site at the north eastern corner. Stopping at the eastern edge at 22.24 only one common pipistrelle pass was recorded with none during the walked phase. At the southern hedge again only one common pipistrelle was recorded near the south eastern corner of the Site and the eastern boundary as quite. Stopping at the east of the Site only two passes of common pipistrelle were recorded.
- 5.20 Stopping approximately half way along the northern hedged boundary no bats were recorded. Crossing the centre of the Site a common pipistrelle was recorded and the final stop near the road produced a single common pipistrelle foraging around the streetlights.
- 5.21 In summary, activity was frequent early on with common pipistrelle much more regular than in the May transect. Soprano pipistrelle was less recorded, other species were limited to overflying noctule. The activity became much less early in the survey and was less than previously, the most activity noted at the open woodland area and along the southern hedgerow.

Bats - Passive Detectors

- 5.22 The detectors have been placed out on four occasions to date, in May, June, July and August. On each occasion they were set to record for a minimum of five nights. An addendum to this report will be produced on completion of the surveys which will include all survey details in respect of bat surveys.
- 5.23 In all survey periods most frequently species noted was common pipistrelle. *Myotis* species, most probably whiskered bat, Natterer's bat and possibly Daubenton's bat from analysis of the sonograms also were recorded very regularly along the northern hedgerow, much less frequently along the southern boundary hedge.
- 5.24 Soprano pipistrelle were irregular over all survey periods despite appearing to be frequent during the May transect but were recorded on all nights and were occasionally frequent.
- 5.25 In July the survey results followed the patten of the previous two with frequent common pipistrelle passes, *Myotis* species mainly along the northern hedge and varying levels of soprano pipistrelle activity.
- 5.26 On this occasion recordings of greater horseshoe bat along both the southern and northern hedgerows were made. On the southern hedge single passes were recorded on the 23rd July and 27th July at 02.09 and 02.17 respectively. On the northern hedgerow, passes were recorded on 26th and 27th July at 02.50 and 02.15 respectively (two passes at

the latter). The timings would suggest a single bat travelling some distance from a roost, possibly following dispersal of a maternity roost.

- 5.27 August results followed the pattern of the previous surveys but notably greater horseshoe was not recorded in this period. Common pipistrelle was the most frequently recorded species with *Myotis* species bats more frequent along the northern boundary but regularly recorded along the southern boundary also.

Reptiles

- 5.28 Seventy felt mats were placed out on 4th March 2024 with survey commencing on 17th April 2024. The conditions of survey are given in Table 5 below.

Table 5: Weather conditions and time of survey	
Date	
24/04/24	9.30 am, 12C, cloud breaking with sunny intervals, F1 W breeze, dry.
07/05/24	9.00 am, 18C, sunny with hazy high cloud cover, still, dry.
14/05/24	10.20 am, 15C, cloud clearing after early showers, sunny intervals, F4 SW breeze, dry.
21/05/24	9.00 am, 16C, ~10% cloud, mainly sunny, F1/2 SW breeze, dry.
19/06/24	10.15 am, 16C, ~70% cloud cover with sunny intervals, fresh F2/3 NW breeze, dry.
18/06/24	9.00 am, 17C, sunny intervals, ~50% cloud, F3 SW breeze, dry.
27/08/24	9.50 am, 16C, sunny intervals, F1/2 W breeze, dry.

- 5.29 Over the course of the survey visits a total of 7 slow worms records were made. The highest count in any one survey event was 2 on visits 6 and 7. No other reptile species were identified from Site.
- 5.30 Records made out of the survey visits by randomly checking mats during other survey visits only located one animal away from mats found to be positive during the reptile survey. This was a young female slow worm found under a mat placed on the services easement shortly after the Site had been cut.
- 5.31 There were concerns over the removal of some mats after the first visit and these were replaced in less obvious positions, no further interference was noted. Only four mats had positive results and these are shown in Figure 5. Four of the records related to the same mat and what appeared to be the same individual, a mature female.

Birds

- 5.32 Although no dedicated survey was undertaken an assessment of the Site and notes of species on or adjacent to it was made. The Site sits on the urban edge of Gorseinon and adjacent to open countryside and the Lougher estuary. The Lougher Estuary is in part designated as the Burry Inlet Special Protection Area (SPA) and RAMSAR Site, of national and international importance to wading birds and waterfowl.
- 5.33 The Site is largely enclosed with the bordering hedgerows unmanaged and succeeding to tall, wooded strips. The Site itself remained unmanaged through the year with tall grasses and rushes. Both habitats select against shorebirds in particular and although curlew and oystercatcher will breed inland, the lack of an unobstructed sightline makes the Site unsuitable for them.
- 5.34 Birds noted on Site were mainly those associated with gardens and woodlands, typical urban birds in Wales. Gulls were noted flying overhead but not seen to land on Site although that would be expected. Birds such as skylark and meadow pipit were not recorded but the latter could occur in the winter period. It was concluded that the Site itself does not form an important resource to the adjacent protected areas due to both its modified nature and enclosed state.
- 5.35 Table 6 below shows bird species recorded on or adjacent to the Site and their conservation status were:

Table 6: Bird species recorded on or near the Site

Common name	Conservation status (Birds of Conservation Concern 4, 2022)
Black headed gull	Red
Blackbird	
Blackcap	
Blue tit	
Bullfinch	Amber
Chiffchaff	
Crow	
Dunnock	Amber
Goldcrest	Red
Great spotted woodpecker	
Great tit	
Herring gull	Red
Jackdaw	
Lesser black backed gull	Red
Magpie	
Mistle thrush	Amber
Nuthatch	
Robin	

Rook	Red
Starling	Red
Swallow	
Tawny owl	
Willow warbler	Red
Wood pigeon	
Wren	

Note:

- Birds only compared against Birds of Conservation Concern 4, 2022.
Red List: A decline of >50% in breeding or wintering populations or range in the last 25 years or longer.
Amber List: A decline of >25% but <50% in breeding or wintering populations or range in the last 25 years or longer.
- Environment Act (Wales) 2016 7 Species, Species of Principal Importance for Biodiversity in Wales in **bold** print.

5.36 Only Jackdaw, crow, magpie and wood pigeon were regularly seen on the open field during the survey period with the majority of Site related bird activity limited to the wooded boundaries. In conclusion it is considered that the Site would support typical woodland/urban and urban edge species and is unlikely to be a significant to either breeding or overwintering notable species.

Badger

5.37 Animal paths were noted on the Site but badger activity could not be confirmed. There was no direct evidence in the form of setts, presence of latrines or foraging scrapes. Fox was noted during the survey period and could be responsible for the paths as could cats from nearby housing.

Other species

5.38 Other species noted were :

Common name
Fox
Grey squirrel
Speckled wood butterfly
Red admiral butterfly
Brimstone butterfly
Meadow brown butterfly

6 DISCUSSION AND IMPACT ASSESSMENT

- 6.1 The surveys have found that the Site is dominated by agriculturally modified grassland that is considered poor semi-improved; it does support a number of species that suggest a reversion to marshy grassland type habitat would occur over time if sensitive management was imposed. It supports a small population of slow worms and that there is bat activity concentrated on the Site boundaries that is generally limited in its extent and species involved. The trees assessed for bat roost potential were all considered to be of negligible or low potential.
- 6.2 A number of common birds were also noted through the survey suggesting that Site boundaries support common breeding birds but it is of no significance to wading birds from the nearby Burry Inlet SPA/RAMSAR site. The species present are typical of semi-rural/urban areas and no Schedule 1 species were noted although the presence of redwing and fieldfare during the winter period would be expected.
- 6.3 In relation to bats common pipistrelle was the most frequently recorded species with their presence consistent throughout the survey period. *Myotis* species bats were also regularly recorded, particularly along the northern boundary. Analysis of the sonograms shows whiskered bats as the most likely species present although sonograms similar to Natterer's and Daubenton's bats were also recorded. Given the use of the Site, definition to species level is not considered important, more that the proper recommendations can be made when dealing with *Myotis* species bats given their general sensitivity to artificial light spill.
- 6.4 The transect surveys give only a snapshot of bat activity; in addition to common pipistrelle, they recorded soprano pipistrelle and noctule bats. Areas of activity noted during the transect surveys were the northern wooded corner of the Site and early in the season an influx of soprano pipistrelle bats from the housing to the south. Although they were not appearing in large numbers, soprano pipistrelles were seen coming into the Site from this area suggesting a possible local roost in the housing. Generally, bat activity seemed to originate from the west with bats flying along the hedgerows from the direction of Gwynfaen Farm.
- 6.5 The use of the passive detectors showed that *Myotis* species activity was usually much later in onset than pipistrelle activity with it often being the most frequently recorded species group noted in the early hours of the morning on the northern boundary in particular. In addition, during July greater horseshoe bat was recorded on both the southern and northern boundaries. The timing of these recordings were fairly consistent at both locations at around 02.00 hours and appear to relate to a commuting animal.
- 6.6 Generally it is considered that the Site is not of major importance to foraging bats with small numbers of bats foraging around the hedgerow boundaries. The transects recorded only single or small numbers of bats at any point. It is probable that the Passive detector recorded passes continued to relate to small numbers of bats and overall bat passes recorded were low with generally numbers around 100-150 passes per night, sometimes

much lower. Recordings showing more than one animal echolocating at any time were rare.

Ground level Tree Assessment (GLTA)

- 6.7 The GLTA found no evidence of roosting bats and no trees of medium or high potential to support roosting bats at threat from the development proposals. Two groups of goat willow showed low potential for roosting bats and recommendations are made in Section 7 to address this.
- 6.8 All UK bats enjoy full protection under British legislation and are also protected under the Conservation of Habitats and Species Regulations (2017) which interpret the Habitats Directive in UK law. The bats noted on Site are also Section 7 Priority Species (Environment Act (Wales) 2016).
- 6.9 The proposed development will retain most of the trees and overmature hedgerow shrubs on the Site boundaries and as such any impact upon bats is considered to be minor. The main potential negative impacts on bats will be from stray artificial light which will particularly affect commuting and foraging horseshoe and *Myotis* species bats.

Characterisation of Impacts for bats

- 6.10 The potential impacts of the development will be the loss of the open field as a foraging area. Artificial light spill is also a potential issue for bats and needs to be considered in any development plan, this factor can delay commuting of bats to favoured foraging areas and reduce local foraging. Measures will be taken to minimise the impacts of the development through light spill.
- 6.11 Survey is still underway with a single transect survey and up to two passive detector surveys still to be undertaken. As such an addendum report will be made on completion which will detail predicted impacts and recommendation for bats. At the current time, with proper mitigation, the proposed development is currently considered to be of **no or minor negative significance** to bats. Following survey completion an addendum report will be issued updating impacts and recommendations on bat populations at the Site.

Reptiles

- 6.12 The results of the reptile survey suggest a low population of slow worm is present. Given the high ratio of mats to area used, and the long period of survey with ad hoc recording during other surveys, the result of a low population is considered to be an accurate assessment.
- 6.13 Table 6 below details the status of a Site for reptiles based on the numbers found by a surveyor in one session. Given the survey used a higher number of mats, a simple calculation would support a 'low population' of slow worms is present on Site; experience would suggest this underestimates the population.
- 6.14 Guidelines developed by Froglife in 1999 remain the main reference document in surveying and estimating reptile populations even though it must be applied with

caution. The criteria for this designation have been formulated to identify Sites that are potentially of importance for reptiles. To qualify for the Key Reptile Site Register at least one of the following criteria must be met:

1. supports three or more reptile species
2. supports two snake species
3. supports an exceptional population of one species (see table 8)
4. supports an assemblage of species scoring least 4 (see table 8)
5. does not satisfy 1 – 4 but which is of particular regional importance due to local rarity.

Table 6: Key Reptile Site Survey Assessment

Species	Low population Score 1	Good population Score 2	Exceptional population Score 3
Adder	<5	5 - 10	>10
Grass snake	<5	5 - 10	>10
Common lizard	<5	5 - 20	>20
Slow worm	<5	5 - 20	>20

- 6.15 Figures in Table 6 refer to the maximum number of adults seen by observation and/or under refugia (placed at a density of up to 10 per hectare) by one person in one day. Given the higher number of mats placed on Site and its size, it cannot be considered a ‘Key Reptile Site’ based on survey findings.

Characterisation of Impacts for Reptiles

- 6.16 The Site is likely to be of **Site significance** only for slow worms, it is noted that no gravid females were seen and all animals were mature, though there was a considerable difference in size between them suggesting an age range across them. The loss of the area to development is likely to be of **no significance** in a local (i.e. Gorseinon) or wider context.

Birds and badgers

- 6.17 The Site supports a typical assemblage of breeding birds with the majority associated with the Site boundaries. The proposed development is considered unlikely to impact upon breeding birds and is considered to be of **no significance** if compensation measures are undertaken.
- 6.18 There was no evidence of badgers using the Site, however a sett is reported from a nearby field approximately 250 metres to the north. As such recommendations are made to ensure that the development takes full account of the potential for badgers to be present. It is considered the development is of **no significance** for badgers.

Designated Sites

- 6.19 The Site sits approximately 115 metres at its closest approach to the Loughor Estuary saltmarsh. This area supports a number of nationally and internationally protected areas

including Sites of Species Scientific Interest, Special Area of Conservation, Special Protection Area and a RAMSAR site.

- 6.20 The importance of the Site in relation to the designated areas is fully discussed in the January 2024 report '*Preliminary Ecological Appraisal, Gwynfaen Phase 2, Gorseinon. Hawkeswood Ecology – February 2024*' and mitigation is proposed in the recommendations in that document.

Summary

- 6.21 The proposed works will remove an open grassland habitat that is in poor condition. The majority of mature hedged boundaries will be retained and mitigation/compensation will be implemented. Impacts are considered to be neutral or of minor negative significance and appropriate mitigation measures must be implemented to comply with planning guidance.
- 6.22 Ecosystem resilience is discussed in the PEA reported referred to above, however it is updated following surveys to date below.
- 6.23 Bat surveys are ongoing currently and impacts and recommendations will be updated to reflect the final outcomes of survey.

Ecosystem resilience

- 6.24 Under the Environment (Wales) Act 2016 and Well Being of Future Generations Act 2015 require Local Planning Authorities (LPA's) and other public bodies must seek to maintain and enhance biodiversity so far as consistent with the proper exercise of their functions and in so doing promote the resilience of ecosystems. Assessment of the Ecosystem Resilience is therefore an integral part of the LPA's duty and they will need to consider the impacts of the proposed development upon the resilience of the adjacent wooded areas in this context. LPAs are directed to consider the resilience of ecosystems early in the planning process to aid assessment of the impacts of any proposed development upon biodiversity. In addition, a letter from the Chief Planning Officer clarified planning requirements in relation to biodiversity impacts (see Section 7) points out the responsibility of the LPA to maintain and enhance biodiversity and to provide '*a net benefit for biodiversity*'.
- 6.25 The premise for Ecosystem Resilience is laid out in Section 4 of The State of Natural Resources Report, a 2018 document produced by Natural Resources Wales (NRW) on behalf of the Welsh Government. It lays out a framework for assessing ecosystem resilience. However, despite the duty placed on LPA's, there is no currently agreed format for this assessment.
- 6.26 It is also important to note that further survey is required to fully understand the biodiversity of value of the Site thus the assessment below may be subject to change following the provision of new data.

- 6.27 Section 4 names five attributes that NRW consider ‘building blocks’ of ecosystem resilience, these are:
- Diversity
 - Extent
 - Condition
 - Connectivity
 - Adaptability
- 6.28 These factors are considered below, although none of them are considered ‘stand-alone’ and all interrelate to some extent. It is also important to note that it is the responsibility of the LPA to assess Ecosystem Resilience and that any Site based report is not able to make judgements on a wider scale. As pointed out above, it is important to note that there is as yet no agreed format to undertake such an assessment.

Diversity

- 6.29 The Site has been significantly modified by agriculture and is currently considered to be poor semi-improved (marshy) grassland. It has poor broad leaved herb diversity but does support a high percentage of rush, sedge and grass species. Protected species diversity of the Site as surveyed is limited to relatively common species including bats, largely confined to the existing wooded boundaries, slow worm and birds that are typical of semi-rural and urban situations.

Extent

- 6.30 The Site is approximately 3.5 hectares which includes a large area of damp sloping rush dominated ground and the line of a drain where significant construction has taken place.

Condition

- 6.31 The Site has been grazed by sheep and ponies and poorly managed. Grazing has been taken off this year with the field being recently ‘topped.’ It is best considered to be recovering following agricultural modification but is species poor. Continuation of the previous grazing management will continue to restrict the development of the Site as a good quality marshy grassland and no grazing or cutting will lead to scrub development.

Connectivity

- 6.32 The Site itself lies on the boundary of Gorseinon with hedgerow connections to the surrounding open countryside of which it is part. The hedgerow/wooded boundaries are shown to be used by bats for commuting and foraging purposes and provide a green corridor for the transport of animals through the area.

Adaptability

- 6.33 NRW comments that:
‘Adaptability differs from the other attributes because it is part of the definition of resilience rather than an attribute that supports it. However, its inclusion in the Environment (Wales) Act is important because it emphasizes one of the most important features of resilience: dynamism and the ability to adapt to change.’

- 6.34 NRW also comments that ‘*Adaptability cannot yet be quantified in an equivalent way to the other attributes and so we have not used it in the assessment of resilience in this State of Natural Resources Review*’. As such this cannot be considered in this report.
- 6.35 At its most simple, this would mean that the LPA must protect any biodiversity value of the of the Site and any impacts likely to affect adjacent areas. Without mitigation, development impacts could be considered to be significant.

7 RELEVANT LEGISLATION

Bats

- 7.1 All UK bats are protected under the Wildlife and Countryside Act 1981. Schedule 5 of this act makes it illegal to intentionally kill, injure or take bats. It is also an offence to intentionally damage or destroy their place of rest. In 2007 the offences of killing, injuring or taking species under Section 9(1), 9(2) and 9(4)a of European Protected Species listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) were removed to avoid duplication with their protection under Annex IV of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora (The Habitats Directive) as amended. The regulations remove the defence of inadvertent or accidental damage to roosts and make the offence ‘absolute’.
- 7.2 Further all bat species are protected under Annex IV of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora (The Habitats Directive) as amended which requires the United Kingdom government to provide bats with strict protection. The Habitats Directive is transcribed into England and Wales Law by The Conservation of Habitats and Species Regulations 2017 and consolidated into UK post Brexit legislation by The Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019; this legislation consolidates amendments made to the earlier 2010 act with the 2019 amendment altering wording to satisfy its status as UK legislation post Brexit. This legislation states in Part 3, Protection of Species, paragraph 43(1) that a person who:
- (a) deliberately captures, injures or kills any wild animal of a European protected species,
 - (b) deliberately disturbs wild animals of any such species,
 - (c) deliberately takes or destroys the eggs of such an animal, or
 - (d) damages or destroys a breeding site or resting place of such an animal,
- is committing an offence.
- 7.3 Further, with regard to disturbance of EPS, Paragraph 43(2) that disturbance is an act which is likely to:
- (a) to impair their ability—
 - (i) to survive, to breed or reproduce, or to rear or nurture their young, or
 - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate;or
 - (b) to affect significantly the local distribution or abundance of the species to which they belong.
- 7.4 In the case of a development involving the loss or modification of a building which may affect bats the above legislation must be considered and it may be necessary to apply to Natural Resources Wales for a European Protected Species Licence (EPSL).
- 7.5 The introduction of the Conservation of Habitats and Species Regulations 2017 has removed the defence of killing or injuring a protected species during a lawful operation, thus even in an instance where planning permission is granted, the presence of bats must

be considered and mitigated for prior to commencement of works. Under the above regulations, a WAG licence can only be given if three tests are satisfied:

- The action proposed is in the interest of preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance to the environment;
- That there is not a satisfactory alternative;
- That the action proposed will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

- 7.6 Failure to satisfy the regulations and obtain an EPSL where required is likely to result in prosecution and can lead to severe fines of up to £5000 per bat and possible imprisonment.
- 7.7 Eight species of bat are listed under section 7 of the Environment Wales Act (2106). Section 7 of the Act provides a list of living organisms of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. This is a list of species considered at threat within Wales and in need of conservation management to maintain and enhance population numbers.
- 7.8 A duty is placed on the Local Authority by the Welsh Assembly Government to maintain and enhance populations of species listed in Section 7.

Reptiles

- 7.9 All common reptiles are protected under the Wildlife and Countryside Act 1981 (as amended) schedule 5, from deliberate injury or killing (Section 9(1)) and sale (Section 9(5)).
- 7.10 A Welsh Government licence is not required to handle or disturb slow worms but there must be proper consideration of the presence of these animals on site and mitigating measures implemented to minimise any impacts on them.
- 7.11 All British reptiles are listed under section 7 of the Environment Wales Act (2106). Section 7 of the Act provides a list of living organisms of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. A duty is placed on the Local Authority by the Welsh Assembly Government to maintain and enhance populations of species listed in Section 7.

Birds

- 7.12 Part I of the Wildlife and Countryside Act 1981 (as amended) makes it an offence (with certain limited exceptions and in the absence of a licence) intentionally to kill, injure or take any wild bird, or intentionally to damage, take or destroy its nest whilst being built or in use, or to take or destroy its eggs. Consequently, even common birds such as blackbirds or robins, and their nests and eggs are protected in this way. Any works involving removal or other management of trees or shrubs must be undertaken outside the breeding bird season (March- August).

- 7.13 Further, section 1(5) of Part 1 of the W&C Act states any person intentionally disturbing any wild bird included in Schedule 1 whilst it is building a nest or is in or near a nest containing eggs or young or disturbs the young of such a bird is committing an offence and liable to a special penalty.
- 7.14 The Conservation of Habitats and Species Regulations 2017 (as amended) has strengthened the protection of wild birds and their habitats. The Regulations now serve “To help preserve, maintain and re-establish habitats for wild birds.”
- 7.15 Under the amended Regulations, Local Planning Authorities (as well as national statutory conservation bodies such as Natural Resources Wales) are required to protect and create bird habitat.

Badger

- 7.16 The Protection of Badgers Act (1992) makes it an offence to kill, injure, disturb or take a badger, or to damage or interfere with a sett without previously obtaining a licence from Natural Resources Wales (NRW).
- 7.17 The legislation states in Section 3:
A person is guilty of an offence if, except as permitted by or under this Act, he interferes with a badger sett by doing any of the following things—
(a) damaging a badger sett or any part of it;
(b) destroying a badger sett;
(c) obstructing access to, or any entrance of, a badger sett;
(d) causing a dog to enter a badger sett; or
(e) disturbing a badger when it is occupying a badger sett,
intending to do any of those things or being reckless as to whether his actions would have any of those consequences.
- 7.18 Within this legislation, if a sett is present on or near a development Site, a licence is needed to hand dig within 10 metres of the sett, to use light machinery within 20 metres of the sett or to use heavy plant machine digging within 30 metres of the sett.

8 RECOMMENDATIONS

8.1 The recommendations made in the Preliminary Ecological Assessment ‘*Preliminary Ecological Appraisal, Gwynfaen Phase 2, Gorseinon. Hawkeswood Ecology – February 2024*’ remain valid where not superseded in this report. In particular, recommendations made in regard to the adjacent designated sites must be enforced. Recommendations here relate mainly to protected species and habitat enhancements. An Ecological Clerk of Works (ECW) will be appointed for the duration of the project.

8.2 A Construction Environmental Management Plan (CEMP) will be produced that will contain all important construction constraints and how to manage any on-Site incidents during the construction phase. This will include what measures will be taken, amongst other matters, in the event of protected species being found during the works, safe storage of chemicals and construction consumables and any pollution incidents.

Bats

8.3 With surveys currently ongoing, an addendum report regarding the completed bat surveys will be produced; that document will contain further mitigation recommendations for bats as necessary.

8.4 Trees or groups of trees that are considered to be of low potential to support roosting bats must be re-inspected prior to felling. Only Groups G9 and G10 are definitely scheduled to be removed. The previously untagged goat willow adjacent to T8, identified in Table 3 as T1, will also need to be inspected should its removal to allow the access road to be constructed prove necessary.

8.5 Retention of the hedgerows as commuting routes is important to retain connectivity across and through the Site. These measures will help retain areas of the Site important for commuting and foraging bats as well as other commuting and foraging animals.

8.6 Artificial lighting and spill into the surrounding areas and retained habitats may present a significant impact upon nocturnal wildlife using the Site, in particular bats. If artificial lighting is to be utilised a predicted illuminance contour map (lux plots) should be produced and a methodology for reducing light spill into the neighbouring habitats to less than 1 lux if possible (i.e. by use of baffles). If this lux level cannot be achieved, further measures must be investigated to reduce light spill impacts.

8.7 Illuminance surveys should be undertaken by an appropriately qualified engineer and accord with the survey guidance presented in the Bat Conservation Trust ‘*Bats and Artificial Lighting at Night*’ guidance note 08/23 of 2023. The use of ‘bat friendly’ lighting (wavelengths above 550 nano metres) should be used for any street lighting employed. All lighting will be in accordance with the Bat Conservation Trust guidance note 08/23.

8.8 The use of personal security lighting on any housing should be discouraged, possibly by the provision of low level lighting on the new properties should they back onto the

retained areas and adjacent habitats. A close boarded fence barrier should also be considered near the retained habitats to assist in prevention of rubbish dumping and disturbance of those areas.

- 8.9 Integral bat boxes will be installed in the new housing. These should be either built into the walls or fixed in inaccessible locations and made of hard wearing material such as ‘woodcrete.’ Final designs to be used will be agreed with the ECW when the wall construction details are available.

Reptiles

- 8.10 As only a small number of animals were present, habitat manipulation will be used to encourage animals to leave the Site. Final vegetation clearance works will take place in warm and dry weather. If undertaken early or late in the activity season (i.e. April – May or September – October) works will not commence until 10am on warm sunny days. This will allow the reptiles to bask and warm in the sun before cutting begins.
- 8.11 To encourage animals to leave the Site, vegetation clearance will commence from the centre of the Site and progress to the Site boundaries. The first cut should only be to a height of 12cm, to expose the ground. A cut at this height will not cause injury to reptiles but may also expose any suitable features attractive to reptiles (i.e. for hibernation) that can be dismantled or moved by hand. This cut can take place at any time.
- 8.12 Following this but no sooner than 24 hours later, the vegetation can be cut to ground level in suitable weather conditions when the animals are active. This is normally April to October but is weather dependent and timing should be agreed with the ECW prior to works commencing.
- 8.13 The felt mats will be left on Site and prior to both cuts commencing they will be checked and any animals removed to safe areas where no development is planned along the northern boundary. Recommendations for habitat retention and enhancement (see drawing edp7068_d022) will ensure that re-colonisation of the Site is possible following construction.

Other Protected Species

- 8.14 Immediately prior to commencement of works an assessment of the Site and surrounding area will be made for the presence of badger setts. Should there be evidence of setts, a development licence may be required for any works taking place within 30 metres of the setts.
- 8.15 Woodcrete bird nesting boxes will be fitted to the new build where appropriate. These will include swift boxes in houses overlooking open space giving free flying access and house sparrow terraces where access is ‘cluttered’.
- 8.16 All gardens bordering retained habitats should be closed board fenced. Hedgehog passes must be constructed into the fence bases as closed fencing can isolate areas of garden, particularly impacting on hedgehog travel. Boards will be cut out to give a minimum

15x15cm gap at the bottom, or more preferably be fitted to leave a minimum 15cm gap at ground level for the length of the fence.

- 8.17 As with bats, artificial lighting will be controlled during development and through the continuing life of the development. There will be no spill of artificial light into the Loughor estuary or saltmarshes. The development layout will assist in this and the retention of mature trees along the western boundary will also assist in breaking up any light spill.

Habitats

- 8.18 Any landscaping plan should introduce native species reflecting those present in the local area (all native species should be of local provenance) and be suitable for enhancing prey items for bats (invertebrates).
- 8.19 In addition to recommendations made in the PEA, a full landscaping plan, edp7068_d022 produced by The Environmental Design Partnership (EDP) is provided. Details within the drawing include strengthening the wooded boundaries by new native planting, gapping and beating up the eastern hedgerow and providing new habitat in the attenuation pond area. In addition, areas of marshy grassland will be retained and developed to address the loss of the current poor quality habitat.
- 8.20 In particular, an easement running south – north across the Site will be developed as an area of marshy grassland utilising the existing species with additional plug planting of native species. Access restrictions and limitations to works on the easement offer an opportunity to retain and enhance existing habitat.
- 8.21 This part of the Site is currently dominated by glaucous sedge with frequent soft rush, compact rush and slender rush. Common fleabane and square stemmed St john's wort are also present here and long with occasional lesser spearwort and marsh ragwort. Enhancements will include protecting those species already on Site, including adding where necessary common fleabane, lesser spearwort and marsh ragwort possibly using on-Site stock, plus plants brought in of local provenance such as ragged robin and purple loosestrife to give structure and colour to the habitat.
- 8.22 Management proposals here will include provision of appropriate habitat management, i.e. cut and remove in August annually, preferably with a follow up cut later in September and an early season cut in March or April if conditions allow.
- 8.23 Cutting in August will allow the area to be available for recreational use which may include football etc. Such activities will allow some limited 'poaching' to occur emulating to some extent the impact of grazing animals.
- 8.24 The attenuation pond offers further potential to produce a marshy grassland habitat. In this location bringing in a topsoil that will hold water and not be freely draining is recommended. This will be seeded with a 'wet meadows' wild flower mix such as

Emorsgate EM8. The soils utilised are likely to come from the Site and will be lightly compacted prior to seeding.

- 8.25 Wherever possible existing trees should be retained. Tree roost protection zones (RPZ) will be outlined for retained trees and will comply with BS 5837:2012 – Trees in relation to design, demolition and construction.

9 CONCLUSIONS

- 9.1 The surveys have shown up to seven species of bats using or overflying the Site with activity largely concentrated on the northern and southern boundaries.
- 9.2 A small population of slow worms has been identified with only two areas of the Site seen to support them on more than one visit. Recommendations are made to safely remove slow worms from Site using habitat manipulation. Suitable habitat will remain on Site following construction to support re-colonisation by slow worms.
- 9.3 The Site supports a species poor recovering habitat best described as species poor semi-improved grassland which is reverting to a poor marshy grassland type. Recommendations are made to enhance the retained habitat or newly created habitat favouring species of marshy grassland to provide areas of species rich marshy grassland in the final development.
- 9.4 No major constraints to the proposed development are foreseen if the recommendations made are implemented.

10 BIBLIOGRAPHY

The Conservation of Habitats and Species Regulations, 2017, HMG.

The Wildlife and Countryside Act 1981 (as amended).

The Environment Act (Wales) 2016

Mitchell Jones, A J & Robertson C J (Eds) *Bat workers Manual, 3rd Edition*, Joint Nature Conservation Committee, 2004

Bat Conservation Trust (2016), *Bat Surveys for Professional Ecologists – Good Practice Guidelines*. Bat Conservation Trust, London.

Russ, J. (1999) *The Bats of Britain and Ireland, Echolocation Calls, Sound Analysis and Species identification* – Alana Books.

Russ, J. (2012), *British Bat Calls, A Guide to Species Identification*, Pelagic Publishing, Exeter.

Bats and Artificial Lighting in the UK, Guidance Note 08/23 (2023) Bat Conservation Trust, Institution of Lighting Professionals.

Froglife, 1999, '*Reptile Survey, an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*', Froglife Advice Sheet 10, Froglife, Halesworth.

NAARS, 2008, '*Survey Pack*', The Herpetological Trust.

Gent. T. & Gibson, S. (2003) *Herpetofauna Workers Manual*, JNCC

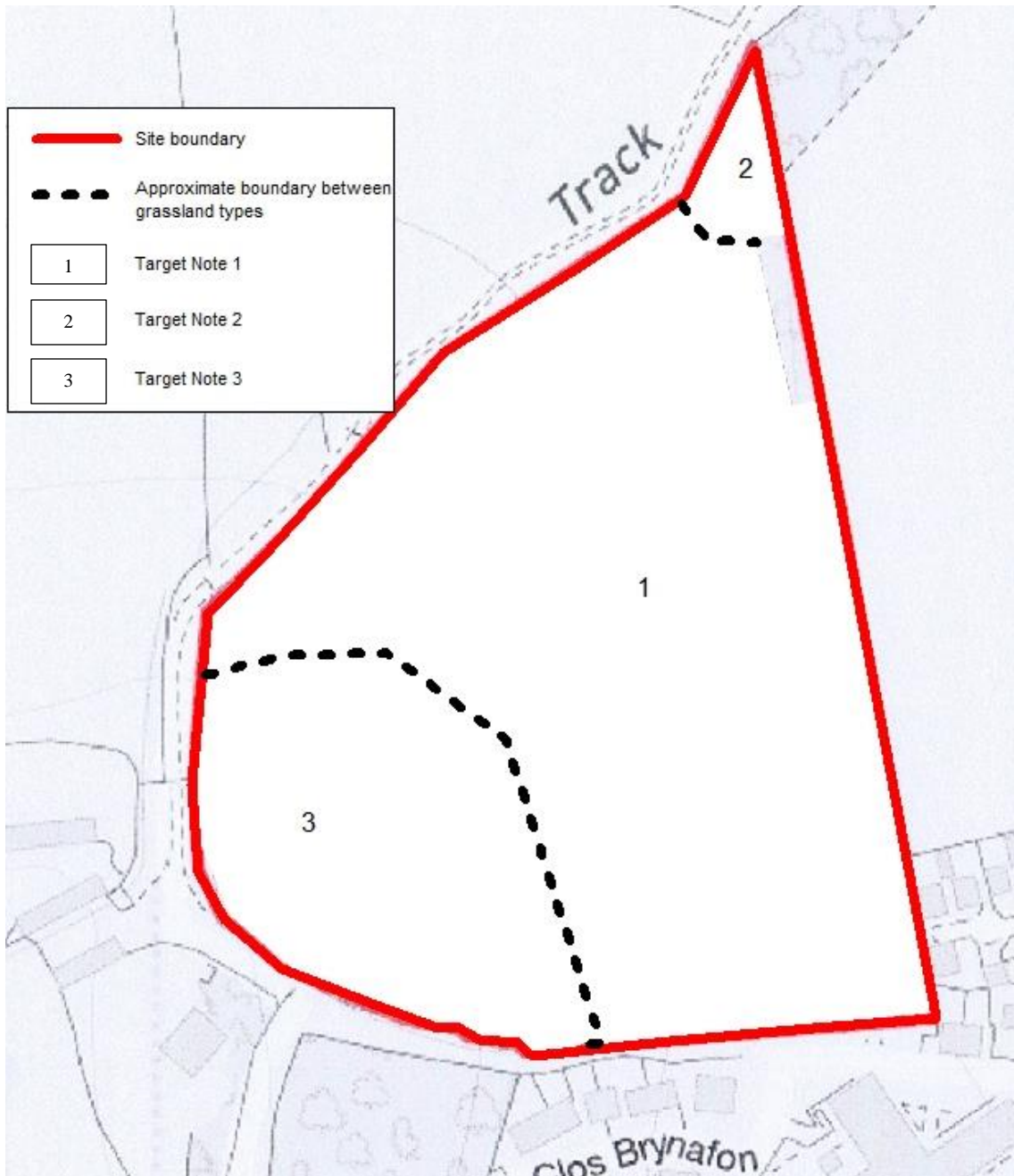
Herpetofauna Groups of Britain and Ireland (1998) *Evaluating local mitigation/translocation programmes: Maintaining Best Practice and lawful standards*.

HGBI advisory notes for Amphibian and Reptile Groups (ARGs). HGBI, c/o Froglife, Halesworth. Unpublished

Thompson Environmental Consultants, 2020. '*Preliminary Ecological Appraisal, Gwynfaen Farm*'

FIGURE 1
APPROXIMATE BOUNDARIES OF GRASSLAND TYPES IDENTIFIED IN SUMMER
WALK OVER (See report text for details)

Figure 1: Approximate boundaries of grassland areas described in text



**FIGURE 2:
BAT ACTIVITY TRANSECT ROUTES**

Figure 2: Bat Activity Transect Route, Locations of Surveors during Static Phase.

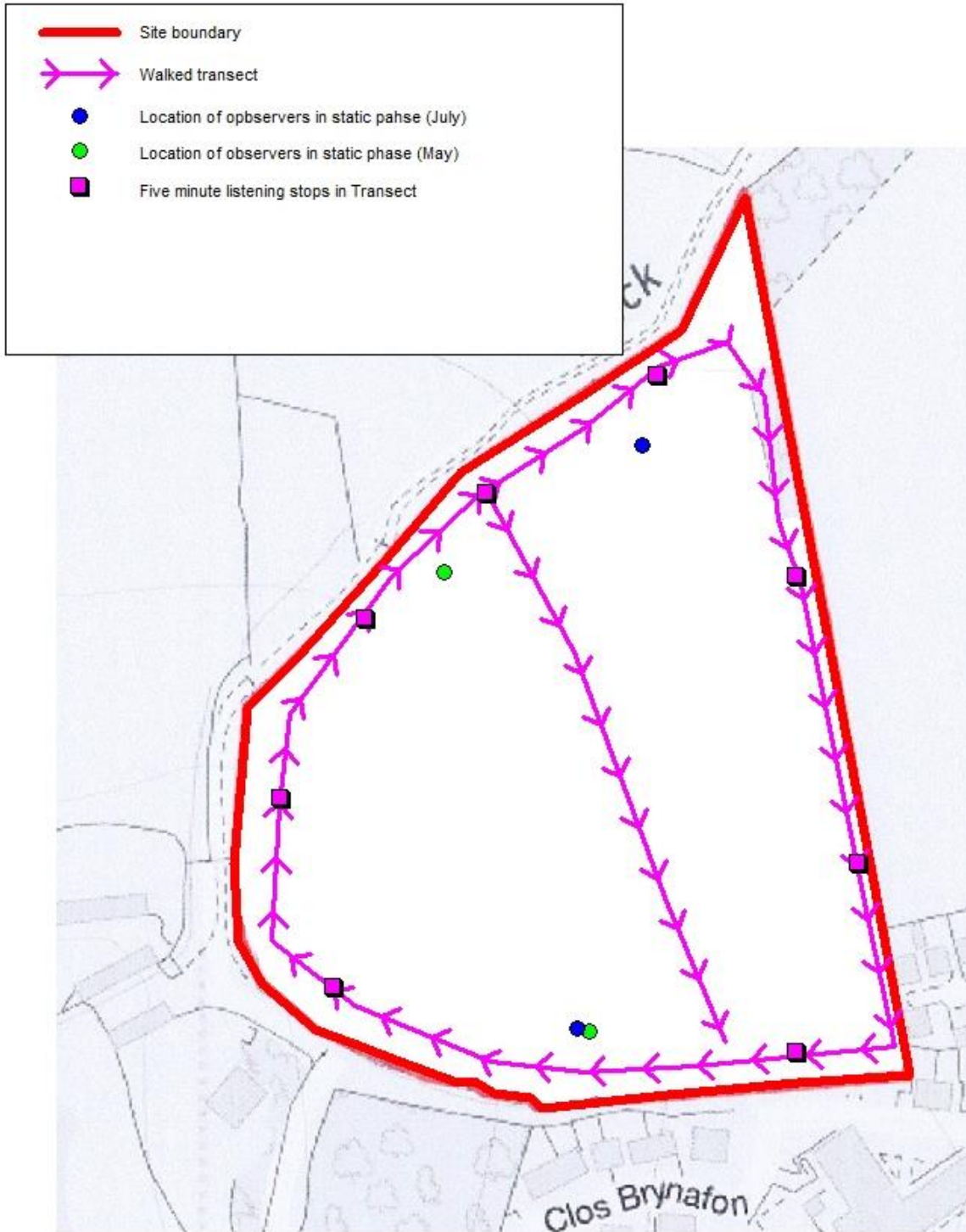


FIGURE 3
LOCATIONS OF PASSIVE DETECTORS

Figure 3: Location of Passive Detectors through Survey Periods (May-August)

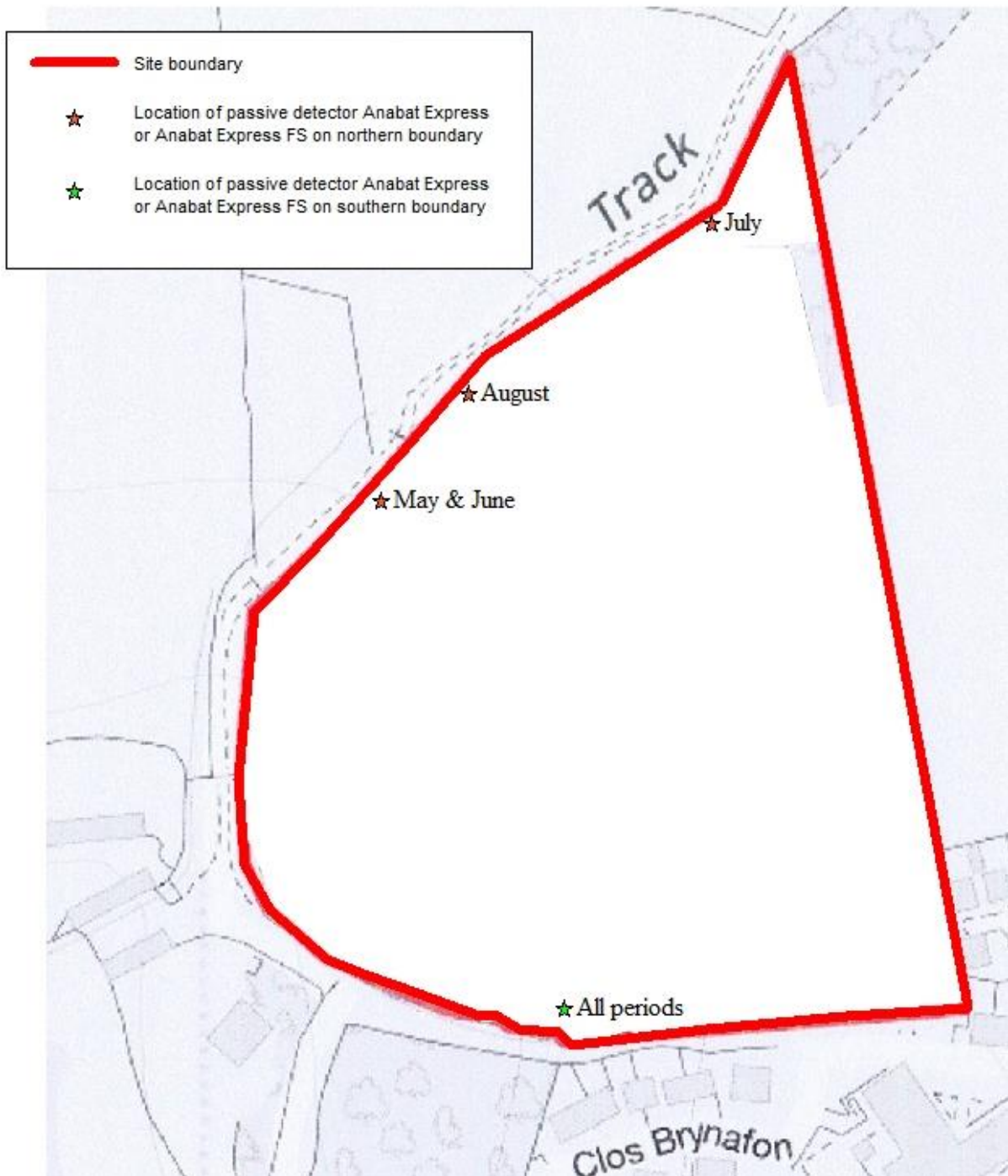


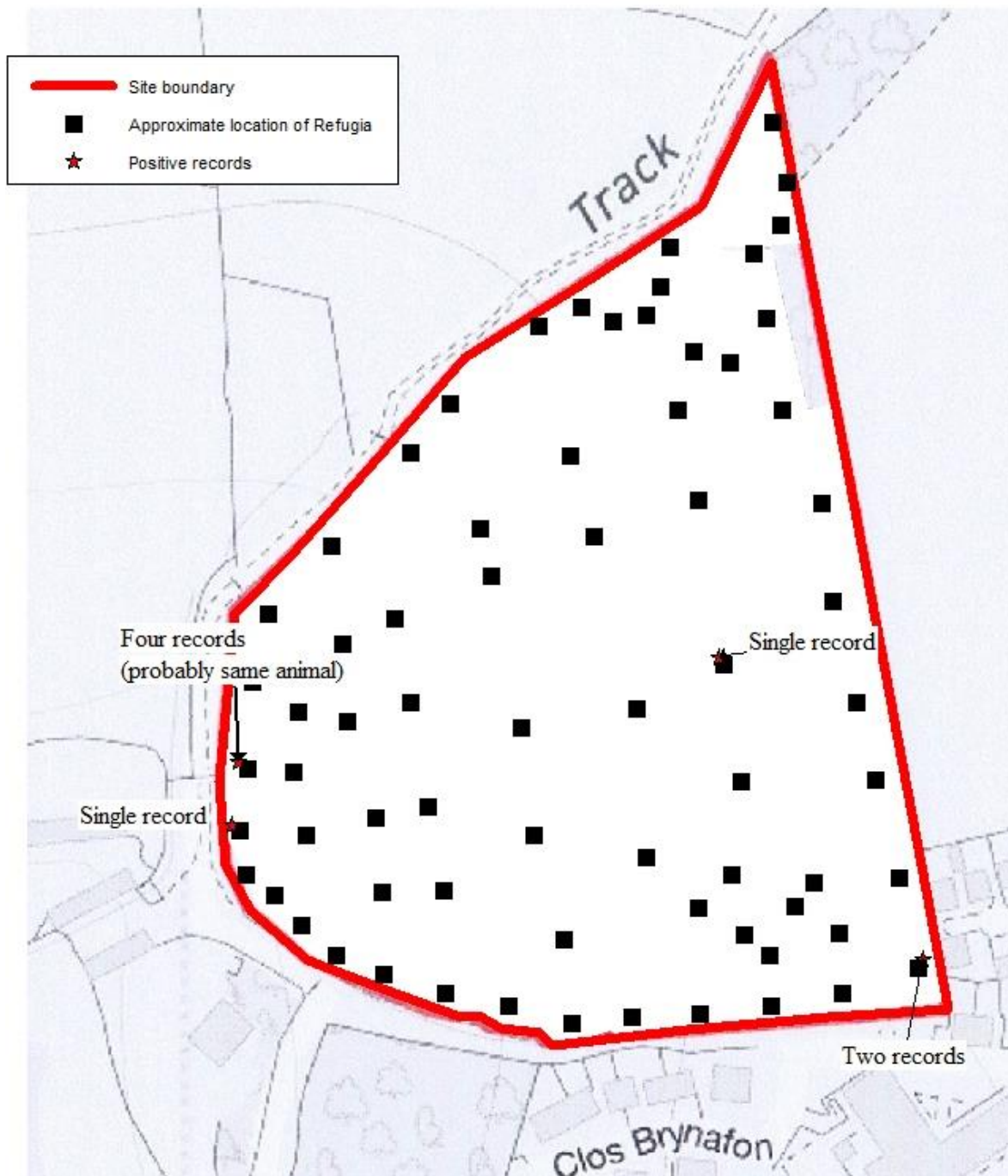
FIGURE 4
APPROXIMATE LOCATIONS OF TREES ASSESSED FOR BAT ROOST POTENTIAL

Figure 4: Approximate positions of trees assessed for bat roost potential



FIGURE 5
APPROXIMATE LOCATIONS OF REPTILE REFUGIA AND POSITIVE LOCATIONS

Figure 5: Approximate locations of reptile refugia



APPENDIX 1
DAFOR SCALE OF COVER ABUNDANCE

The DAFOR scale is used as a simple measure of cover abundance for individual plant species within a habitat. The scale is as follows:

- D Dominant
- A Abundant
- F Frequent
- O Occasional
- R Rare
- (L Locally – sometimes used as a prefix to the above)

APPENDIX 2
HABITAT SURVEY TARGET NOTES

1. Main area of field, grass species were dominant across most of the area. Where a drainage easement is laid across the Site glaucous sedge was abundant along with frequent hairy sedge and oval sedge, these species appearing occasionally through the rest of the Site. Rushes present include occasional to locally frequent soft rush, compact rush and jointed rush; hard rush and slender rush occurred rarely. Broad leaved herbs included locally frequent creeping buttercup and occasionally occurring lesser spearwort, common fleabane, red clover, lesser trefoil, meadow buttercup, spear thistle, common cat's-ear, curled dock and bird's-foot trefoil. Species recorded were:

<i>Species</i>	<i>Frequency</i>
Bird's-foot trefoil	O
Bramble	O
Broad leaved willowherb	O
Common cat's-ear	O
Common fleabane	O
Compact rush	O
Creeping bent	F/LA
Creeping buttercup	LF
Creeping cinquefoil	O
Creeping thistle	LF
Crested dog's-tail	LA
Curled dock	O
Daisy	O
Field mouse ear	O
Floating sweet grass	O
Foxglove	O
Glaucous sedge	O/LA
Goat willow	O
Gorse	O/LF
Hairy sedge	F
Hard rush	O
Jointed rush	R
Lesser spearwort	O
Lesser trefoil	O
Marsh ragwort	O
Marsh thistle	O
Meadow buttercup	O
Oval sedge	O/LA
Perennial rye-grass	F/LA
Red clover	O
Ribwort plantain	O

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Rough meadow grass	O
Selfheal	O
Silverweed	O
Slender rush	R
Soft rush	O/LF
Spear thistle	O
Square stemmed St John's wort	R
Sweet vernal grass	F/LA
Timothy	F
Yorkshire fog	LA

2. An open and previously under grazed naturally regenerated woodland canopy consisting of mainly goat willow with occasional oak and ash. This area was very wet throughout the survey period, with occasionally standing water in places. Floating sweet-grass was locally abundant as were creeping buttercup. Yorkshire fog, meadow foxtail and sweet vernal grass were frequent or locally frequent and remote sedge occasional. Other species note included marsh ragwort, lesser spearwort, enchanter's nightshade, meadow buttercup, hemlock water dropwort, marsh thistle, common marsh bedstraw and broad buckler fern. Common dog-violet was present on the adjacent hedgerow banks.

<i>Species</i>	<i>Frequency</i>
Ash	O
Bramble	O
Broad buckler fern	O
Common dog-violet	O
Common marsh bedstraw	O
Creeping buttercup	F/LA
Enchanter's nightshade	O
Foxglove	R
Goat willow	O
Hawthorn	O
Hemlock Water-dropwort	O
Holly	R
Marsh thistle	O
Meadow buttercup	O
Meadow foxtail	LF
Oak	O
Remote sedge	O
Rough meadow grass	F
Soft rush	O
Sweet vernal grass	F
Yorkshire fog	F

3. At Target Note 3 the flora is dominated by soft rush and compact rush. This area lies on a west facing slope and was wet throughout the survey period. Yorkshire fog is abundant, floating sweet grass is locally abundant; crested dog’s tail and creeping bent are frequent. Jointed rush anis locally frequent and meadow foxtail occasionally occurring. Other species recorded include frequent marsh ragwort and lesser spearwort.

<i>Species</i>	<i>Frequency</i>
Bird’s-foot trefoil	O
Common fleabane	R
Compact rush	LF
Creeping bent	F
Creeping buttercup	O/LF
Crested dog’s-tail	F
Floating sweet grass	A
Jointed rush	F/LA
Lesser spearwort	LF
Marsh ragwort	LF
Meadow foxtail	O
Oval sedge	O/LA
Silverweed	LF
Soft rush	A
Yorkshire fog	A

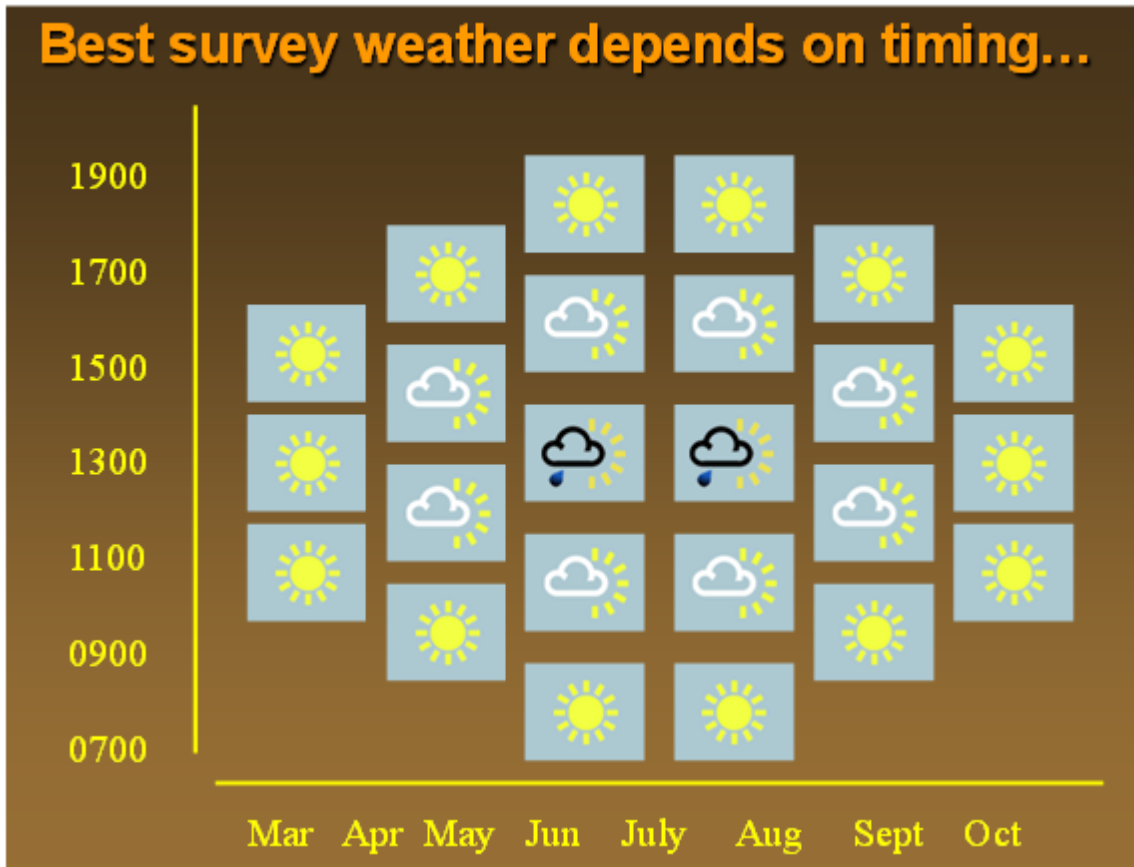
APPENDIX 3
LIST OF PLANT SPECIES RECORDED IN THE SURVEY
(See also species list in PEA report)

<i>Species</i>	<i>Scientific Name</i>
Annual meadow-grass	<i>Poa annua</i>
Ash	<i>Fraxinus excelsior</i>
Bird's-foot trefoil	<i>Lotus corniculatus</i>
Bramble	<i>Rubus fruticosus</i> agg
Broad buckler fern	<i>Dryopteris dilatate</i>
Broad leaved willowherb	<i>Epilobium montanum</i>
Common cat's-ear	<i>Hypochaeris radicata</i>
Common dog-violet	<i>Viola riviniana</i>
Common fleabane	<i>Pulicaria dysenterica</i>
Common marsh bedstraw	<i>Gallium palustre</i>
Compact rush	<i>Juncus conglomeratus</i>
Creeping bent	<i>Agrostis stolonifera</i>
Creeping bent	<i>Agrostis stolonifera</i>
Creeping buttercup	<i>Ranunculus repens</i>
Creeping cinquefoil	<i>Potentilla reptans</i>
Creeping thistle	<i>Cirsium arvense</i>
Crested dog's-tail	<i>Cynosurus cristatus</i>
Curled dock	<i>Rumex crispus</i>
Daisy	<i>Bellis perennis</i>
Enchanter's nightshade	<i>Circaea lutetiana</i>
Field mouse ear	<i>Cerastium fontanum</i>
Floating sweet grass	<i>Glyceria fluitans</i>
Foxglove	<i>Digitalis purpurea</i>
Glaucous sedge	<i>Carex flacca</i>
Goat willow	<i>Salix caprea</i>
Gorse	<i>Ulex europaeus</i>
Hairy sedge	<i>Carex hirta</i>
Hard rush	<i>Juncus inflexus</i>
Hawthorn	<i>Crataegus monogyna</i>
Hemlock Water-dropwort	<i>Oenanthe crocata</i>
Holly	<i>Ilex aquifolium</i>
Jointed rush	<i>Juncus articulatus</i>
Lesser spearwort	<i>Ranunculus flammula</i>
Lesser trefoil	<i>Trifolium dubium</i>
Marsh ragwort	<i>Senecio aquatica</i>
Marsh thistle	<i>Cirsium palustre</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadow foxtail	<i>Alopecurus pratensis</i>
Oak	<i>Quercus robur</i>
Oval sedge	<i>Carex ovalis</i>

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Perennial rye-grass	<i>Lolium perenne</i>
Red clover	<i>Trifolium pratense</i>
Remote sedge	<i>Carex remota</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Rough meadow grass	<i>Poa trivialis</i>
Selfheal	<i>Prunella vulgaris</i>
Silverweed	<i>Potentilla anserina</i>
Slender rush	<i>Juncus tenuis</i>
Soft rush	<i>Juncus effusus</i>
Spear thistle	<i>Cirsium vulgare</i>
Square stemmed St John's wort	<i>Hypericum tetrapterum</i>
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
Timothy	<i>Phleum pratense</i>
Yorkshire fog	<i>Holcus lanata</i>

APPENDIX 4
SUITABLE SURVEY CONDITIONS



**APPENDIX 5
PHOTOGRAPHS**

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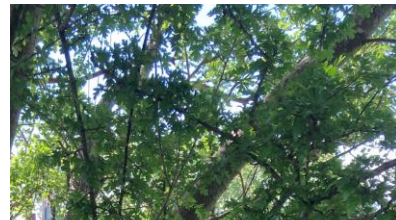


Setting out passive detectors in July (locations indicated by arrow), northern boundary top, southern boundary bottom.

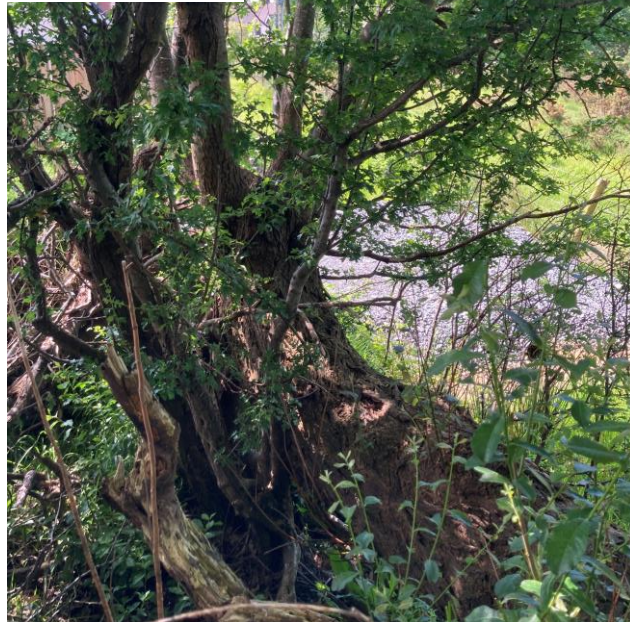
Photos from tree survey



Common oak, T8



Goat willow A1





Group 9

Group 10





The most frequently used mat with the same slow worm seen on four occasions throughout the survey period



Some of the reptile refugia mats after initial disturbance, used to make a dry path to the children's den!

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(Proprietors: Niki and Eric Hawkeswood)

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