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PRELIMINARY ECOLOGICAL APPRAISAL

LAND AT DYFFRYN ROAD, AMMANFORD.

PHASE 1.

ON BEHALF OF

CORONADO DEVELOPMENTS LTD

August 2021

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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. Surveys older than this are unlikely to be accepted by a Local Planning Authority or Natural Resources Wales as viable documentation.

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SUMMARY
Hawkeswood Ecology was instructed to carry out a Preliminary Ecological Appraisal on land identified for development at Dyffryn Road, Ammanford. It is proposed to develop the Site as residential housing. Currently planning permission for a Phase 1 build of the project is being sought. Surveys of a wider site area including Phase 1 are underway presently.

The Site is in a semi-rural location on the western boundary of Ammanford; it lies to the southeast of Dyffryn Road, along which there is ribbon development to Saron in the west. The northern boundary of the Site is Dyffryn Road, which is a busy main road connecting Ammanford to Capel Hendre and Saron. To the east it is bounded by secondary and semi-natural ancient woodland, with a cemetery to the northeast; to the south it is bounded by relatively recent residential development.

The Site was walked over in March 2021 to scope out necessary surveys. Having been previously surveyed in 2009, planning permission was already extant, but further ecological survey was conditioned as part of an extension of Planning Permission. The walk over showed a significant change in habitats on Site since 2009 and a number of species surveys were considered necessary. These were scoped out with the Local Planning Authority (LPA) Ecologist in June 2021 when pre-application consultations with the LPA were undertaken.

Surveys now being reported or still underway are:
- Phase 1 Habitat;
- Reptile presence absence;
- Bats, transect and passive monitoring;
- Dormouse;
- Invertebrates.

The Application Area supports rank semi-improved neutral grassland which is damp in places, dense scrub, defunct hedgerows and secondary woodland. Scattered scrub is present throughout the grassland areas.

Survey outcomes to date have identified both slow worm and grass snake across the wider site and in the Application Area. Two three bat survey have been completed with a survey due in late August. Currently the results are generally poor with limited passes from only four species identified with certainty. Common and soprano pipistrelle are by some way the most frequently recorded species with noctule and Myotis species bats occurring occasionally. The is a potential recording of a greater horseshoe bat which was very time limited and has been passed to a referee for confirmation.

Dormouse surveys are being undertaken and will not be completed until October 2021. To date, with surveys undertaken up to July, no evidence of dormice has been found and no nuts found that could have been opened by this species. An initial

invertebrate survey of the Site is being undertaken and no results are available to date.

There are active badger setts on the Site boundary with evidence of foraging badgers across the Site, and this activity is mapped. Breeding birds occur in the dense scrub and wooded areas with no particularly notable grassland species present. No specific breeding bird survey was undertaken but many adventitious records have been made during the course of the surveys and a habitat assessment for birds has been made.

The application is for Phase 1 Build of a wider development and there will be ongoing requirements for mitigation and other works to limit biodiversity loss. Recommendations are made in regard to this is Section 8.

1 INTRODUCTION

1.1 Hawkeswood Ecology was instructed by Coronado Developments Ltd to carry out a Preliminary Ecological Appraisal (PEA) on land at Dyffryn Road, Ammanford (Grid Reference SN 617 125). It is proposed to develop the Site for residential purposes.

1.2 The Site is abandoned farmland which is dominated by rank grass and scrub with developing secondary woodland. Relict hedgerows separate four former fields and these are generally in poor condition and have become dominated by shrub species with goat willow invading. There are few standard trees present. The Site lies to the southeast of Dyffryn Road to the west of Ammanford. To the immediate east it is adjacent to an area of semi-natural ancient woodland and areas formerly identified as marshy grassland which are now goat willow dominated secondary woodland.

1.3 The Site has previously been surveyed in 2009 with planning permission subsequently granted in 2014. On application to renew consent, the council granted an extension but conditions were imposed seeking in-date ecological survey. Following an unreported walk over assessment of the Site by Hawkeswood Ecology undertaken in March 2021, it was considered that the following surveys were required to satisfy the Local Planning Authority conditions:

- Preliminary Ecological Appraisal including a Phase 1 Habitat Survey;
- Reptile presence absence;
- Bats, transect and passive monitoring;
- Dormouse;
- Invertebrates.

1.4 The objectives of the surveys are:

- To ascertain the habitats and species present within the Site;
- To assess the ecological and nature conservation value of the Site;
- To assess the potential ecological impacts of the proposed development;
- To provide recommendations to mitigate the proposed works.

1.5 The Phase 1 Habitat Survey was carried out on 22nd and 23rd June 2021. A reptile presence – absence survey was carried out between 23rd April and 23rd June 2021 and is reported separately (See Appendix 5). Bat surveys are currently being undertaken with two of three visits so far completed in June and July. Dormouse survey is being undertaken between April and October with visits to July currently completed and an initial invertebrate survey is being undertaken in early August.

1.6 This report deals only with the Phase 1 Habitat Survey and reptile survey results in full. It also presents partial species survey results and consideration for other species groups in the impacts and recommendations. However, a final impact assessment and conclusions cannot yet be presented until all outstanding work is complete.

1.7 This report is to support a limited application on the Site, ‘Phase 1’; this is referred to as the Application Area in this report. As the surveys reported on here cover the whole development Site, many findings relate to the wider Site and not specifically to the Application Area. Habitat Target

Notes describe only those areas of habitat affected by the current proposals for the Application Area.

2 SURVEY TEAM EXPERIENCE

2.1 The surveyor and report author is Eric Hawkeswood. Eric has many years experience of broad habitat and detailed botanical and species surveying. He has extensive experience of protected species survey and holds Natural Resources Wales and Natural England scientific and conservation licenses for bats and dormice. He has surveyed and mitigated for reptiles for many years. He has been a professional in the nature conservation field for thirty two 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.

2.2 Assistant surveyors on the bat surveys were Emma Adamson, Liam Kelly and David Norton. Emma has over 15 years experience of emergence/re-entry surveys; Liam has worked for Hawkeswood Ecology since 2012. David has worked with Hawkeswood Ecology since 2019. All observers have received a satisfactory level of training and gained suitable experience and are considered fully competent in their role.

2.3 Phil Ward of Mid Wales Ecology was instructed to undertake the Invertebrate Assessment. Phil has over 30 years experience in wildlife survey and habitat management and specialises in invertebrates having undertaken numerous surveys. He is also a part time tutor with Aberystwyth University and is often called upon to provide training courses for other wildlife organisations and education centres. He has held a British Trust for Ornithology (BTO) bird ringing licence since 1987. He is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Phil's survey will be reported separately.

3 METHODOLOGY AND CONSTRAINTS

Desktop Study

3.1 The West Wales Biodiversity Information Centre (WWBIC) was asked to provide records of Protected and Priority Species, Other Species of Conservation Concern, Locally Important Species, Invasive & Non-Native Species, Designated Sites and Phase I habitat for a search radius of up to 2 kilometres from the Site. The results of the data search were filtered to give results since 2000 only; this was considered suitable given the significant changes to the habitats present in that time.

3.2 The UK government MAGIC website was also searched for in relation to internationally designated sites over a 10 kilometres radius.

3.3 Natural Resources Wales were also asked if they held records for dormice in the area of the Site.

Preliminary Ecological Appraisal

3.4 The Preliminary Ecological Appraisal (PEA) was carried out in line with the guidance issued by The Chartered Institute for Ecology and Environmental Management (2013) and consisted of a walk-over survey of the proposed Site taking into account features within and adjacent to it. Habitats were categorised according to the Phase 1 Habitat Survey guidelines (JNCC, 2010) and annotated onto a map (Figure 1). Plant assemblages were described using the DAFOR scale of cover abundance (Appendix 1) and each habitat was recorded using Target notes (Appendix 2); a species list of plants identified during survey is given in Appendix 3 and photographs are given in Appendix 4.

Species Survey

3.5 A number of species surveys are underway, a brief methodology is given below, full details are given in the final reports for each species or group considered.

Dormouse nut search and tube survey

3.6 Any area which showed evidence of fruiting hazel was searched for nuts opened by dormice. Dormice pen nuts in a characteristic and recognisable manner and their presence can often be confirmed by hazel nut shells opened by them.

3.7 In addition, a dormouse tube survey was undertaken which was in line with the standards set out in The Dormouse Conservation Handbook (2006).

Bats - Activity

3.8 A series of three activity surveys are being undertaken of which two are complete. The surveys consist of both transect surveys and passive detectors placed at various locations on the Site.

3.9 Activity surveys were based upon recommendations made in the Bat Conservation Trust Document 'Bat Surveys, Good Practice Guidelines for Professional Ecologist, 2016'. The two visits to date have been undertaken on 3rd June 2021 and 21st July 2021. A final transect survey is to be carried out in late August 2021.

3.10 The transect survey involved two surveyors both of whom used Anabat Scout machines in Transect mode. These machines continually record any bat passes and GPS tracks, the sound recordings available for later analysis.

3.11 Access issues due to the rough terrain and vegetation made walking the Site difficult at any time but particularly in the dark, so point counts were added. Point counts at recorded points were made for five and ten minutes to observe any bat activity taking place.

Bats - Passive

3.12 In addition passive detecting machines were deployed around the same time as the transect surveys. Anabat Express machines 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 at various positions to assist in quantifying the use of the Site by bats.

3.13 In June, three machines were deployed between 26th May and 2nd June; in July, five machines were deployed between 3rd and 25th July.

3.14 The recordings were analysed using AnalookW and Batsound software, by use of which it is possible to separate most species present from the sonograms produced.

Bats – Trees, Preliminary Roost Assessment

3.15 A 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.

Reptiles

3.16 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). Full details can be found in Appendix 5.

Constraints

3.17 The Site is difficult to access as bramble and woody scrub is dense and dominant in any areas. In particular, the field boundaries are extremely difficult to access. Small pathways were cut into these areas to allow some access but it remained limited.

3.18 In addition, the terrain, with rough grassland and many tussock along with the encroaching bramble, made the bat transect surveys a considerable safety issue as they were undertaken at night. To this end surveyors were teamed for safety reasons and two transects using two surveyors were carried out. Even so, progress across the Site was extremely slow and only the open field areas could be accessed. The normal methodology was altered to accommodate these problems with point counting added which will have helped reduce the impact of access upon the outcomes of the transect surveys.

4 DESKTOP STUDY FINDINGS

4.1 WWBIC reported a total of 392 Priority and Protected Species from the 2 kilometre search area, no records were clearly reported from the development Site itself.

Bats

4.2 A total of 67 records of bats were returned involving 7 different species. The most commonly reported bats were common and soprano pipistrelle accounting for 25 and 17 records respectively. These species were also the closest recorded to the Site being reported from a location approximately 450 metres to the north.

4.3 Of the other species recorded, brown long-eared bat was reported on 11 occasions, the nearest from approximately 900 metres to the south in 2019. Noctule bat was noted on 8 occasions, the nearest from approximately 600 metres to the north and whiskered/Brandt's, Daubenton's and Natterer's bats were recorded approximately 1 kilometres to the south. A Leisler's bat was recorded approximately 2.3 kilometres to the east in 2020 and this species is becoming increasingly reported in Wales.

Otter

4.4 Eleven records of otter are reported with the most recent dating from 2011 from an unnamed site within the 1 kilometre grid square that the Site sits in. This is likely to relate to a record made on the same day by the same observer approximately 780 metres east of the Site. Other records range from a distance of approximately 800 – 1900 metres from the Site.

Badger

4.5 Nine badger records are reported, the most recent from 2019 approximately 1350 metres to the north.

Hedgehog

4.6 There are 29 records of hedgehog reported from within 2 kilometres of the Site, the nearest being in gardens to the west of the Site in 2019.

Herpetofauna

4.7 Only 1 record of slow worm is reported from a site approximately 600 metres to the north. Two records of common toad and one record of palmate newt are reported, the nearest being 600 metres to the north and 300 metres to the west respectively.

Birds

4.8 A number of bird species are reported that could occur on Site. The nearest reported is bullfinch from approximately 400 metres. Other species recorded include redwing, dunnock, linnet, tree pipit, barn owl, reed bunting, song thrush, redpoll, house sparrow, starling and grasshopper warbler.

Invertebrates

4.9 Fourteen butterfly and moth records are reported of which six involve marsh fritillary, the nearest record being from over 1 kilometre distant. No other invertebrates are reported.

Flowering plants

4.10 The only flowering plant reported is bluebell which is reported on 43 occasions from a number of sites, the nearest being approximately 200 metres to the north of the Site.

Other Protected and Priority Species

4.11 No records of dormouse, great crested newt or water vole are reported from the search area.

4.12 Ninety five records of Other Species of Conservation Concern are reported of which the large majority relate to birds. Species relevant to the Site are shown in Table 2 below:

Table 2: Relevant Species of Conservation Concern

Birds
Long tailed tit
Grey wagtail
Goldcrest
Dipper
Green woodpecker
Willow warbler
Whitethroat
Mistle thrush
Greenfinch
Invertebrates
Rhagonycha translucida, a soldier beetle
Flowering plants
Charlock

Species of Local Conservation Concern

4.13 Seventy eight records of vascular plants and mosses are reported, many of which could occur on the Site.

Habitats

4.14 From the Site, semi-improved neutral grassland and marshy grassland are reported along with semi-natural ancient woodland. Some parts of the Site are not categorised in the habitat data, in particular, much of the Phase 1 area reported here.

4.15 Habitats near to or connecting with the Site include watercourses, recovering ancient woodland, dense scrub and amenity grassland.

Designated Sites

4.16 There are no international or national designated sites within the search area. Semi-natural ancient woodland is frequent, including adjacent to the Site; a restored ancient woodland Site lies

immediately north of Dyffryn Road and a Natural Resources Wales (NRW) heathland and grassland Priority area lies approximately 500 metres to the north.

Dormice

4.17 Communication with NRW has indicated that there are recent dormouse records both to the west and east of the Site.

MAGIC data base

4.18 Four Special areas of Conservation were identified in a 10 kilometre radius of the Site. The SAC's and their primary reasons for designation are given below in Table 3:

Table 3: Special Areas of Conservation within 10 kilometres of Dyffryn Road.

SAC Name	Approximate distance (K)	Primary Reason for designation
Caeau Mynnyd Mawr	4.2 west	Marsh fritillary butterfly
Carmel	4.3 north	Pant Y Llyn Turlough
River Twyi	9 north	Twaite shad and otter
Carmarthenshire Bay and Estuaries	9.5 south	A series of marine and saline habitats including estuaries; Twaite shad

5 FIELD SURVEY FINDINGS

Introduction

5.1 The Application area consists of rank unmanaged grassland across two formerly managed fields, relict hedgerows, secondary woodland and scrub; the scrub is woody, bracken and bramble dominated. and bracken. The Phase 1 Habitat Survey was carried out across the wider Site and to prevent later confusion, the Target Note numbers used reflect the wider site survey. The description of habitats cut by the application area red line cover the whole of that habitat. The Site history is as agricultural land which has not been managed in recent times, the last cut and pasturing being in the early 2000's (Google Earth timeslider). There appear to have been past attempts to improve and drain the Site.

5.2 There are relict hedgerows bounding the Site to the north and west, with a hedgerow crossing the Site separating the two fields. Scrub is abundant, encroaching from all boundaries and the internal hedgerow across the Site. Full descriptions of the Target Noted areas are given in Appendix 2.

Habitats

Grassland

5.3 The grassland areas in the application area are grass dominated rank remnants of open fields. At Target Note 2 the grassland is rank with woody scrub and encroaching bramble throughout the sward. Red fescue is abundant with frequent to locally abundant false oat-grass, sweet vernal-grass, Yorkshire fog and meadow foxtail with locally frequent cock's-foot; soft rush is occasional to locally abundant. Broad leaved species include common knapweed, common marsh bedstraw, creeping and meadow buttercup, marsh thistle, common hemp-nettle, lesser stitchwort, wild angelica, lady's smock, meadowsweet and bird's-foot trefoil.

5.4 At Target Note 19 the field is heavily encroached by dense woody and bramble scrub, with scattered goat willow and oak scrub across the field. Again rank, false oat-grass is only occasional with timothy becoming dominant over much of the field later in the season. Sweet vernal-grass and meadow foxtail are abundant with occasional to locally abundant Yorkshire fog. Broad leaved herbs include creeping buttercup, marsh ragwort, bird's-foot trefoil, greater bird's-foot trefoil, ragged robin, lady's smock, common vetch, hogweed, rosebay willowherb, southern marsh orchid, common dock, square stemmed St John's wort and hemp agrimony.

5.5 Species indicating the abandoned nature of the grassland include common nettle, hogweed, creeping thistle, curled dock and bramble which all occur at different frequencies across the area. Badger paths were noted across both fields. The paths lead from the eastern wooded boundary to the north-western corner of the application area, and across the field through the relict hedgerow at TN 10 to the field TN 19. Both areas are probably best described as semi-improved neutral grassland despite the presence of some plants typical of wetter habitats such as hemp agrimony, soft rush and meadowsweet.

5.6 At Target Note 25 is a glade in developing secondary woodland at the south of the application area which is best described as marshy grassland. Damp loving species dominate with abundant great willowherb, locally frequent meadowsweet, soft rush, common marsh bedstraw and bird's-foot trefoil. Marsh thistle, ragged robin, perforate St John's wort, hemp agrimony, wild angelica and

southern marsh orchid are occasionally occurring. Grasses are rare; goat willow scrub is frequent. The area is unmanaged and subject to scrub encroachment.

Hedgerows

5.7 There are four hedgerows in the application area. the roadside hedgerow at Target Note 3, the northern hedgerow at the boundary with the cemetery, Target Note 5 and the hedgerow between the two fields, Target Note 10. Another defunct hedgerow, at Target Note 13 runs though scrub at the south of the application Site.

5.8 The hedge at Target Note 3 is gappy, unmanaged to a height of around 5 metres and on a bank to the roadside It has no standard trees but does support common oak and ash which form much of the developing canopy species; ash dieback is apparent. Shrub species were hazel, elder and dogrose. The ground flora was largely shaded out with much bare ground, species present included dog's mercury, bluebell, common dog violet, greater stitchwort, enchanter's nightshade, hart's tongue fern and broad buckler fern.

5.9 The hedge at Target Note 5 is off-Site and forms the boundary with the adjacent cemetery. It is unmanaged and gappy with a canopy of mature common oak and ash and occasional holly. Shrub species are locally frequent hazel, holly, dog rose, blackthorn and hawthorn with rarely occurring berberis species. The ground flora is heavily shaded out with abundant ivy, bramble and common cleavers. Bluebell is frequent with locally frequent common dog violet, greater stitchwort, enchanter's nightshade and honeysuckle. Bracken is also locally frequent in the west of the hedgerow.

5.10 The hedgerow at Target Note 10 is unmanaged, gappy and on a bank. It runs through dense scrub which has encroached into the adjacent fields. The canopy is dominated with semi-mature goat willow and rarely occurring common oak. The shrub layer consists of abundant hazel with frequent holly and occasionally occurring blackthorn, sycamore and goat willow; honeysuckle is locally frequent. The ground flora is largely shaded out with much bare ground and litter with abundant ivy. Bluebell, enchanter's nightshade and bramble are all occasionally to locally abundant, male fern, broad buckler fern, wood avens and foxglove occur occasionally and white bryony occurs rarely.

5.11 At Target Note 13, an unmanaged hedgerow runs to the south on a bank with a ditch. It is dominated by hazel and holly with blackthorn and hawthorn. The ground flora is largely overshadowed with much bare ground and litter, ivy is locally abundant. Bluebell, lesser celandine, common hemp-nettle, male fern, and black bryony occur.

Scrub

5.12 Scrub dominates large areas of the application area having encroached into the fields from the field boundaries with the cessation of management. At Target Note 1, scrub encroaching from the hedgerows is dense and a mixture of goat willow dominated scrub and dense stands of bramble; in the northern corner, bracken forms a dense stand. Goat willow is abundant with locally abundant blackthorn; grey willow, ash and sycamore occur occasionally. Bramble and common cleavers are abundant with locally abundant common nettle and locally dominant bracken. Other species

include marsh thistle, dog rose, creeping thistle, broad-leaved willowherb, hemp agrimony and common ragwort.

5.13 The scrub at Target Note 26 is within a highly disturbed area with some hardstanding which may have been building platforms or animal pens, no walls remain. An area immediately adjacent to the road appears to have been regraded and seeded recently, this may be related to fairly recent road works. Scrub here is dense with frequent open glades. Species present are goat willow, hawthorn, blackthorn and alder. The ground flora is relatively diverse with tall herbs dominating with species present including false oat-grass, cock's-foot, great willowherb, hemp agrimony, evening primrose, comfrey and common figwort. Other species recorded included creeping cinquefoil, tufted vetch, common knapweed, greater bird's-foot trefoil, carnation sedge, black medick, perforated St John's wort common vetch and germander speedwell.

Woodland

5.14 At the southern end of the application area is an area of recently developed secondary woodland (Target Note 22) and an area of marshy grassland (Target Note 25). The woodland has developed over former fields with a canopy aged around 15 years. The woodland varies from being wet to drier areas on slopes to the west. Goat willow is the dominant canopy species with the shrub layer poorly developed consisting of rarely occurring dogwood near a garden boundary and locally frequent hazel near old hedgerows in the woodland. The ground flora varies in density with some areas shaded out. Species recorded include opposite leaved golden-saxifrage, honeysuckle, yellow iris, hedger woundwort, creeping buttercup, meadowsweet, broad buckler fern, lady fern, wavy bittercress, remote sedge, soft rush and enchanter's nightshade. In proximity to the old hedge banks running through indicator species of older hedgerows and woodlands such as yellow pimpernel, wood speedwell and yellow archangel occur.

Other habitats

5.15 There are small areas of hard standing at a couple of locations in the Site, mainly concrete pads. Adjacent to the application area is the Nant-Y-Ci which lies in a steep sided channel.

Summary

5.16 The application site is dominated by scrub, derelict hedgerows and rank semi-improved neutral grassland. The scrub is encroaching and if not managed will result in the grassland areas succeeding to scrub and eventually woodland.

Fauna

5.17 A number of fauna surveys are being undertaken or have been completed. The situation at the time of writing with each is detailed below.

Reptiles

5.18 A reptile presence – absence survey was undertaken in April to June 2021. The results showed the presence of slow worms and grass snakes across the application area. The reptile survey report is attached as Appendix 5.

Bats

5.19 Bat surveys are being undertaken across the wider site throughout the activity season. To date, two transect surveys and two sessions with passive detectors have been undertaken.

5.20 Transect survey has recorded three species, common pipistrelle, soprano pipistrelle and noctule bat. The most frequently recorded species is common pipistrelle. A single call of greater horseshoe bat was recorded from Hedgerow 19 during the second session. The call characteristics were such that a referee opinion was sought from Rob Morgan of Just mammals LLP, this has confirmed the call is 'most likely' to be a greater horseshoe bat.

5.21 The full bat survey report will be produced on survey completion. Species recorded on both transects and from passive recording date are shown in Table 4 below.

Table 4: Species recorded during survey

26th May to 2nd June 2021	**2nd July to 18th July 2021**
Common pipistrelle	Common pipistrelle
Soprano pipistrelle	Soprano pipistrelle
Whiskered	Whiskered
Noctule	Noctule
Possible brown long-eared	Daubenton's
	Greater horseshoe

5.22 Passes of all species recorded have been related to the Phase 1 Application Area with the exception of Daubenton's bat.

Bats – Preliminary Roost Assessment

5.23 In the Application Area for the Phase 1 Build, the only trees with obvious Potential Roost Features are those in the boundary hedgerow at TN 5. Here a number of mature common oak and ash show features that could provide potential roosting opportunities for bats. If these trees are to be affected by the development, it is probable that climbing or observation surveys would be required before commencement.

Dormice

5.24 Dormouse tube survey is currently ongoing. Tubes are being checked on a monthly basis with checks carried out from April to July at the time of writing; checks will continue until October 2021. There have been no signs of dormice using the tubes to date, tubes have been occupied by wood mice on two occasions and used by birds occasionally, mainly for roosting.

5.25 A nut search was carried out initially, and has been ongoing during the tube inspections; no nuts opened by dormice have been found to date. A full report detailing box locations and findings will be submitted on survey completion.

Birds

5.26 A specific breeding bird survey was not carried out, given the large number of site visits for other survey, it was considered that a habitat assessment and adventitious records would give a suitable account of the value of the Site for breeding birds.

5.27 Habitats on Site are dominated by scrub, secondary woodland and grassland. The grassland is considered too rank to support birds such as meadow pipit or skylark and it is too enclosed to support wading birds such as curlew. The scrub and woodland does offer many opportunities for breeding birds and typical species such as whitethroat, willow warbler and blackcap were recorded across the wider site. The most notable sighting was a merlin flying through the site during a bat transect in June where observers on both transects saw the bird fly in from the cemetery and onwards south through the site. Other species are noted in Table 5 below, birds considered to have probably bred on site or in adjacent habitats are denoted in bold type.

Table 5: birds recorded on site.

Blackbird
Blackcap
Blue tit
Bullfinch
Chaffinch
Chiff chaff
Collared dove
Crow
Dunnock
Garden warbler
Grasshopper warbler
Great spotted woodpecker
Great tit
Green woodpecker
Jackdaw
Lesser black backed gull
Long tailed tit
Magpie
Merlin
Mistle thrush
Nuthatch
Raven
Robin
Song thrush
Sparrowhawk
Starling
Swallow
Swift
Tawny owl
Treecreeper
Whitethroat
Willow warbler
Wood pigeon
Wren

5.28 In summary, it is considered that the wider site supports suitable habitat for a number of bird species, both for breeding and foraging purposes. The majority of species noted would be expected to occur across the current application area.

Badger

5.29 Signs of badger have been found across the Site with paths leading from identified setts across the Application Area, latrines being noted in a number of locations. Paths and latrines are shown in Figure 2. The setts identified appear to be outlier setts with no main sett located in or near to the site.

Invertebrates

5.30 An initial survey is currently underway and a report and feedback is being waited for.

5.31 Adventitious records include a number of butterfly species including orange tip, comma, brimstone, ringlet, peacock, red admiral, speckled wood and large skipper.

Other species

5.32 The site supports potential habitat for otter using the Nant-Y-Ci, no evidence of otters has been found during surveys currently being undertaken.

5.33 The Site does not support suitable habitat for water vole or great crested newt. Hedgehogs are likely to occur and are considered in Section 8, Recommendations.

6 DISCUSSION AND IMPACT ASSESSMENT

6.1 It is expected that all habitats on site will be lost to the development, this will include the roadside hedgerow, the relict hedgerows running across the application areas, the scrub and grassland areas. The proposed development is fairly dense housing in which there will be very limited opportunities to mitigate this loss. However, the ecological conditions at the site are fluid and the relatively rapid encroachment of scrub has already led to a loss of much of the grassland habitat on site.

6.2 The Phase 1 build application area consists of Site consists mainly of rank semi-improved neutral grassland and a small area of marshy grassland with scrub, secondary woodland and former field boundaries. The site appears to have last been managed in 2006 since which time no works have been undertaken allowing encroachment of scrub from the field boundaries into the fields. At the current rate of encroachment, it could be expected to see the majority of the site under dense scrub and secondary woodland within maybe twenty to thirty years.

6.2 It was considered that both remaining open areas of grassland in the former fields have been subject in the past, to some level of agricultural improvement which may have included over-seeding and addition of artificial fertilisers. This is best demonstrated by the differences in grasses between the fields, with the area described at Target Note (TN) 19 dominated by timothy grass which is almost absent in the grassland at TN2 where false oat-grass and Yorkshire fog are amongst the dominants.

6.3 The remaining hedgerows on site are in poor condition, having been unmanaged since abandonment, they are the source of much of the scrub development on the Site. There are very few standards away from the hedge at TN5 which is outside the application area. If the trees in this hedgerow are affected in any way by the works, it is likely that further bat surveys, such as climbing, will be necessary.

6.4 As slow worm and grass snake have been recorded across the Site. A reptile translocation exercise will be necessary as there is no suitable habitat left on the wider site following development. At the current time a receptor site is being set out for survey and it is hoped that this site, very close to the application area will be available for translocation.

6.5 Bat and dormouse surveys are being undertaken but not yet complete. Two bat survey sessions have been undertaken with surprisingly limited activity and species recorded. By far the most commonly recorded bat is common pipistrelle followed by soprano pipistrelle. Two *Myotis* species have been recorded, whiskered bat, which has been recorded frequently at TN10 as well as occasionally at other areas around the Site, and a probable Daubenton's bat recorded on a passive detector at the south of the Site.

6.6 In addition, a brief call was captured on 13th July that appears to be a greater horseshoe bat. It was very limited and has been forwarded to a referee for confirmation; only one pass was recorded at 22.10 hours. This, along with the presence of *Myotis* species bats in particular, demonstrates a need for the control of artificial light spill from the development.

6.7 At the time of writing dormouse tube surveys have failed to identify the presence of this species and no nuts opened by them have been found. The extent of the tube survey is into the adjacent woodlands to the east of the Site and in all suitable areas across the Site. Of the one hundred tubes in situ across the wider Site around 20 are in the current application area. Results have shown tubes rarely occupied by wood mice, with wood mice also found under reptile refugia along with field voles.

6.8 There are a further three dormouse survey visits to be undertaken to complete the survey and the results will updated on conclusion, as will be the case for bat surveys. As the surveys are not yet complete, any impacts upon these species cannot properly be assessed; recommendations and impacts will be assessed fully upon completion.

6.9 An initial invertebrate scoping survey is being undertaken and will report shortly. The Site has shown the presence of a number of butterfly species and given its currently rank nature and scrub it is likely to be of local significance for invertebrates.

6.10 The Site is considered to have a high value for breeding and foraging birds with common breeding species likely to occurring across the wider site. There are similar sites in the immediate area, but consideration to some mitigation in Site Landscaping should be given. Badgers use the Site quite widely and there are outlier setts on the eastern boundary. The current Application area does not come within 30 metres of the setts, but their presence will be a consideration of both the Phase 1 development and later phases.

6.11 The Site may have potential for hedgehog and measures should be taken in any future Site design to ensure that passage of hedgehog across the Site is possible; recommendations are made in Section 8.

6.12 Of the statutory sites noted within 10 kilometres of the Site, the only one with a direct connection to the Site is included Carmarthen Bay and Estuaries SAC, which also includes the Burry Inlet and Loughor Estuary SSSI. The Nant Y Ci runs into the River Loughor approximately 3 kilometres downstream and over 10 kilometres from the SAC as the river flows. With proper control of potential pollutants and any runoff from the Site workings, no impact on the SAC is foreseen.

6.13 None of the habitats on Site qualify as SINC when compared to the Wales Biodiversity Partnership guidelines (2008) with none supporting an appropriate number of indicator species. Hedgerows of any form are considered to be Habitats of Principal Importance under the Environment Act (Wales) 2016. However, the hedgerows on Site are largely subsumed by the developing scrub and are no longer functional. The loss of the hedgerows is not considered to constitute a significant impacts in their own right. It is clear that bats commute and forage along the lines of the hedgerows however, and this will be considered in any recommendations.

6.14 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. 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 8, Relevant Legislation and Policies paragraphs 8.17-8.19) points out the responsibility of the LPA to maintain and enhance biodiversity and to provide '*a net benefit for biodiversity*'.

6.15 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. In this instance, it is considered that significant impacts will be of a local nature (Site and surrounding area) but the results of further species surveys are still awaited.

Predicted Development Impacts

6.16 Initial impacts made here are subject to amendment following conclusion of the on-going surveys. The Site itself is considered to be of **moderate value** to wildlife in a Local context but is considered to be of **minor significant value** in a County context. The rationale for this is based upon the presence of a wide diversity of common breeding birds and two species of reptile plus the remnant diversity of the Site flora. At this stage the Site is apparently of only limited value for foraging bats and of no importance for dormice. Upon completion of these surveys, and also the invertebrate scoping survey, the Site significance will be re-assessed.

6.17 Impacts can be direct or indirect and affect both the habitats and species on Site and in areas adjacent to the Site. Direct impacts are the loss of all habitats currently present on Site and potential for pollution incidents to occur during construction that could impact upon adjacent habitats. The direct impacts will affect species using the Application Area and wider Site.

6.18 Indirect impacts are likely to be increased disturbance from light pollution and domestic pets in the adjacent areas, particularly into the semi-natural ancient woodland to the east of the Site.

6.19 A 'do nothing' scenario will see the Application Area and Wider Site succeed to secondary woodland. Whilst this will in itself carry biodiversity benefits, much of the current diversity on Site will be lost as with the development.

6.19 The proposals will remove the habitats within the Application area. Currently the impacts cannot be properly predicted as further survey results are awaited. If assumed that no significant changes to bat movements across the Site or dormice are found, it is probable that the loss of the existing habitats will be of **minor significance** in a Site or wider (County) context following mitigation. This predicted impact assessment may need be amended following the outcomes of the ongoing surveys.

6.20 The predicted impact will also require re-assessment if any trees in the hedgerow at TN 5 are to be removed or managed.

7 RELEVANT LEGISLATION AND POLICIES

Birds

7.1 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).

7.2 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.

7.3 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."

7.4 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.

Bats and dormice

7.5 All UK bats and dormice are protected under the Wildlife and Countryside Act 1981. Schedule 5 of this act makes it illegal to intentionally kill, injure or take bats or dormice. 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 2981 (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'.

7.6 They are also 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 European Protected Species with strict protection.

7.7 The Habitats Directive is transcribed into England and Wales Law by The Conservation of Habitats and Species Regulations 2017, this legislation consolidates amendments made to the earlier 2010 act. 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,
I 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.

7.8 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.

7.9 In the case of a development involving the loss or modification of a habitat which may affect an EPS the above legislation must be considered and it may be necessary to apply to Natural Resources Wales for a European Protected Species Derogation Licence EPSL.

7.10 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 EPS must be considered and mitigated for prior to commencement of works. Under the above regulations, a derogation 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.

7.11 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 animal and possible imprisonment.

7.12 Eight species of bat and dormice 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.

7.13 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

7.14 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)).

7.15 A Welsh Assembly 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.

Badgers

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.

Hedgehogs

7.19 Hedgehogs are protected under the Wildlife and countryside Act 1981 (as amended) as a Schedule 6 species and Wild Mammals Protection Act (1996) from capture, deliberate killing and cruel treatment.

8 RECOMMENDATIONS IN RESPECT OF PHASE 1, DYFFRYN ROAD

8.1 Further survey is currently ongoing for:
- Bats – activity surveys;
- Dormice – Tube surveys;
- Invertebrates – initial scoping survey.

8.2 In regard to reptiles, the report given in Appendix 5 details the proposed translocation measure to be undertaken. The translocation will consist of a capture and release exercise. It is hoped an adjacent Site will prove suitable for the animals captured on site.

8.3 Given the proximity of the works to an active badger sett, precautions will be put in place to prevent any machinery or equipment to be used or stored within 30 metres of the sett locations. When further phases of development are undertaken it is probable that a development licence will need to be obtained (see Section 7, paragraphs 7.16-7.18).

8.4 Any works on trees and shrubs and vegetation clearance should be undertaken outside the accepted bird breeding season of March to August. There is no licence for the destruction of active bird nests and nest translocations invariably fail. No clearance should be undertaken in the breeding

season that could potentially destroy an active nest. Should the mature trees in TN 5 be affected, it is probable that tree climbing survey will need to be undertaken prior to commencement.

8.5 Artificial lighting can impact negatively upon nocturnal species, such as bats, which can be affected by artificial light spill. Consideration will therefore be given to the level of external lighting around the Site and a detailed lighting scheme should be produced and agreed with the Local Planning Authority. Artificial lighting will take into consideration the details provided by the guidance note 08/18 produced by the Bat Conservation Trust and the Institution of Lighting Professionals. It is likely in this instance that predicted illumination contours (a lux plot) will need to be produced along with measures to mitigate its impact on adjacent habitats, particularly retained hedgerow boundaries and woodland.

8.6 Lighting will be located with consideration for nocturnal species and will avoid adjacent areas, in particular the undeveloped areas to the north. Any domestic lighting will be placed at a level lower than three metres, be cast to the ground with no up-lighting and will ideally be on a time switch to ensure any resultant light scatter is limited in duration; it should only be used in areas where safety is a consideration.

8.7 The use of close board fencing can isolate areas of garden, particularly impacting on hedgehogs. If the use of such fencing is proposed between gardens as well as at the Site boundary, 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.

8.8 Any landscaping plan should introduce native species reflecting those present in the local area (all native species should be of local provenance). Plantings should include species known to be valuable to foraging birds and bats and mirror those in the adjacent hedgerows and semi-natural broad-leaved woodland and scrub.

8.9 Integral bat and bird boxes will be used in the new construction. Bat tubes will be located on buildings near the Site boundaries, particularly adjacent to northern boundary, and bird boxes, in particular swift and house sparrow boxes on a number of houses throughout the development. Typical examples are shown in Figure 3. The locations of bat and bird mitigation will be such that they are not vulnerable to attack from cats and are free from human interference.

8.10 SuDS features should be used to mitigate any loss of habitat and a programme of biodiversity improvement in line with the SuDS Manual Chapter 6, Designing for Biodiversity, should be designed at an early stage and implemented in the final development.

8.11 An area will be identified during the construction phase where chemicals and building materials can be safely stored and bonded to prevent contamination of the adjacent habitats. Measures to prevent and deal with any pollution incidents will be clearly outlined in a Construction Environmental Management Plan (CEMP).

8.12 Hedgerow and Tree roost protection zones (RPZ) will be outlined in the CEMP; no vehicles or mechanical works will be allowed in the RPZ areas. All tree protection works will comply with BS 5837:2012 - Trees in relation to design, demolition and construction.

8.13 These recommendations may be further modified following the results of the ongoing surveys.

9 CONCLUSIONS

9.1 The Site is presently dominated by rank semi-improved neutral grassland, hedgerows, secondary woodland and scrub with a small area of marshy grassland. All habitats on Site are abandoned and have not been managed for at least 15 years. The lack of management is leading to the development of scrub and scrub woodland across the Site.

9.2 A number of recommendations are made in Section 8 which if implemented should limit permanent impacts from the proposed scheme. The outcome of ongoing bat, dormouse and invertebrate studies may lead to a revision of predicted impacts and recommendations.

9.3 The Application Area is part of a wider proposed development Site in which all existing habitats are likely to be lost.

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FIGURE 1:
PHASE 1 HABITAT MAP

Figure 1: Phase 1 Habitat Survey map

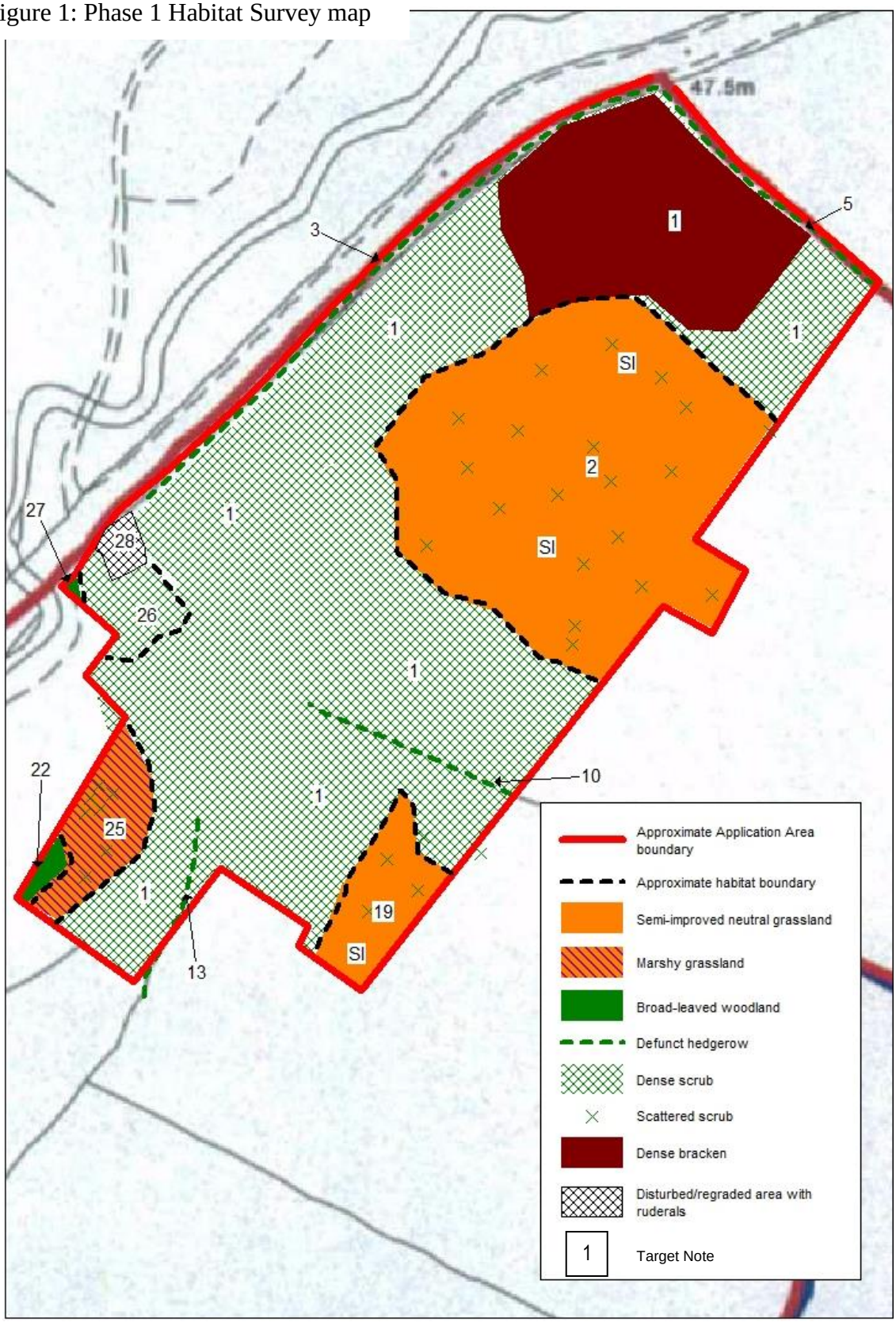

FIGURE 2
SIGNS OF BADGER ACTIVITY

Figure 2: Signs of badger activity

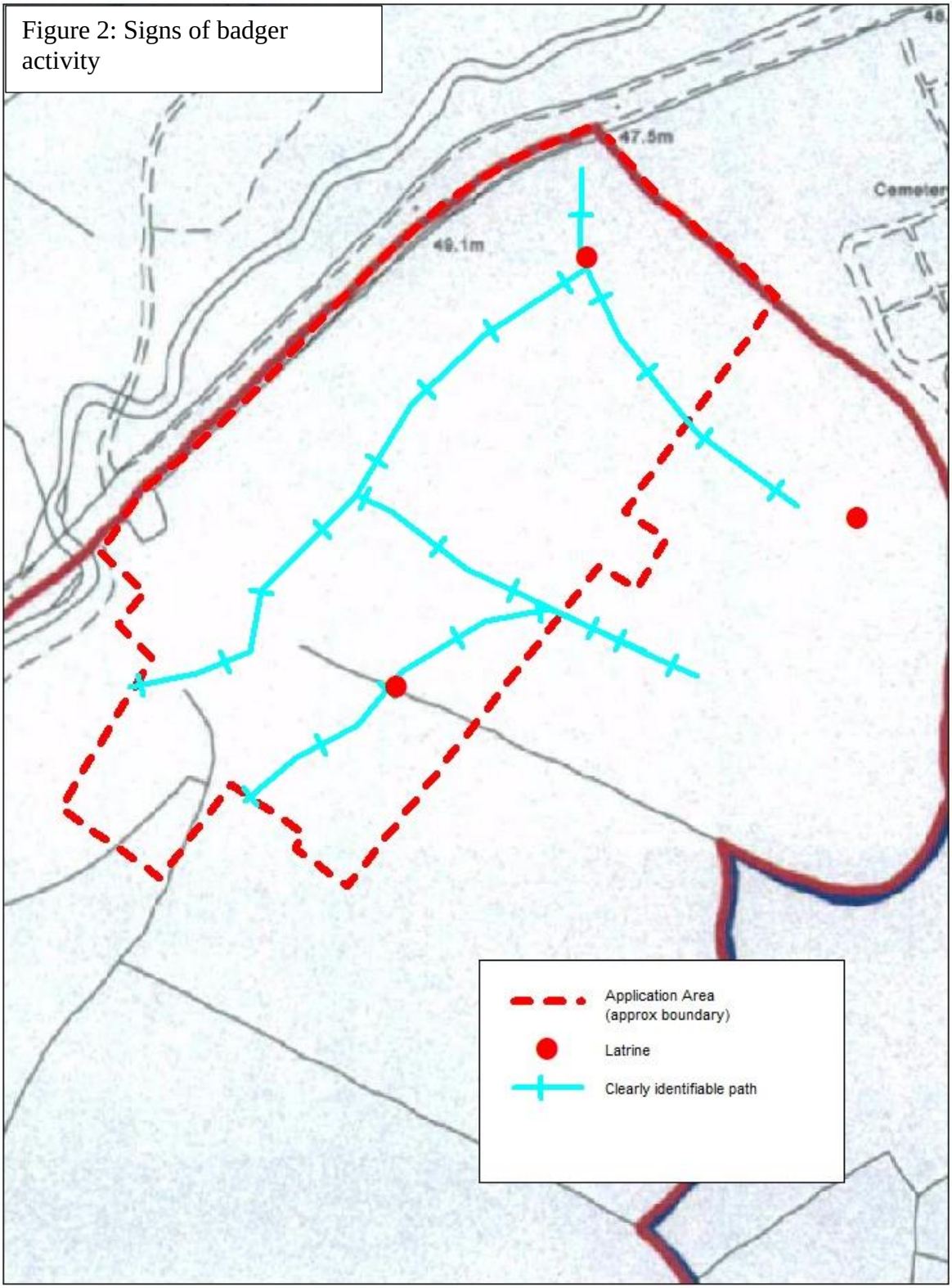

FIGURE 3:
TYPICAL INTEGRAL BAT ROOSTING AND BIRD NESTING BOXES

Free Access Bat Box A

- Available in all brick types
- Discrete single bat brick
- Easy to install
- Allows bats to create a natural home habitat within the cavity of the building

Enclosed Bat Box B

- Designed specifically for the pipistrelle bat
- Available in all brick types
- Discrete home for bats
- Various sizes
- Several roosting zones are created inside the box
- Bats are contained within the bat box itself
- Maintenance free with entrance at the base
- Ideal for new build & conservation work

Enclosed Bat Box C with engraved motif

- Designed specifically for the pipistrelle bat
- Available in smooth blue, smooth gold & smooth red
- Attractive "bat" motif
- Discrete home for bats
- Various sizes
- Several roosting zones are created inside the box
- Bats are contained within the bat box itself
- Maintenance free with entrance at the base
- Ideal for new build & conservation work

Typical House Sparrow box to be fitted under eaves

Triple Swift Cavity nest box

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
PHASE 1 HABITAT SURVEY TARGET NOTES

1. Dense goat willow, blackthorn, bramble and bracken dominated scrub encroaching into field from boundaries, largely impenetrable. Species noted were:

Species	*Frequency*
Ash	O
Blackthorn	LA
Bracken	LA
Bramble	A
Broad buckler fern	O/LF
Broad leaved willowherb	O
Common cleavers	A
Common marsh bedstraw	O
Common nettle	LF
Common ragwort	O
Creeping thistle	F
Enchanter's nightshade	LF
False oat-grass	O
Field rose	LF
Germander speedwell	LF
Goat willow	A
Grey willow	O
Hedge bindweed	O
Hemp agrimony	LF
Marsh thistle	O
Meadow vetchling	R
Red campion	O
Silverweed	LF
Sycamore	O
Wavy bittercress	O

2. Open grassland in northern field (Field 1 on map). Rank unmanaged grassland with abundant bramble throughout and a large block of bramble in the eastern apart of the field. Woody scrub of goat willow, ash, common oak and hawthorn is scattered throughout, some areas have species indicating the damp nature of the ground but there appear to have been attempts to drain in the past and possible sign of improvement with a lack of sedge family species. Best described as damp semi-improved neutral grassland. Species recorded were:

Species	*Frequency*
Ash	O
Bird's-foot trefoil	O/LF
Bramble	F
Broad-leaved willowherb	O
Cock's-foot	LF
Common chickweed	O
Common cleavers	LF
Common dock	F
Common hemp nettle	O
Common knapweed	F
Common marsh bedstraw	O/LA
Common nettle	F
Common oak	O
Common sorrel	O/LF
Common spotted orchid	O
Creeping bent	F
Creeping buttercup	O/LA
Creeping cinquefoil	LF
Creeping thistle	O/LF
Curled dock	O
False oat-grass	F/LA
Goat willow	O
Great willowherb	LF
Hairy sedge	O
Hawthorn	O
Hemp agrimony	LF
Hogweed	F
Lady fern	R
Lady's smock	O
Lesser spearwort	R
Lesser stitchwort	O
Marsh ragwort	O
Marsh thistle	LF
Meadow buttercup	O/LF
Meadow foxtail	F/LA
Meadow vetchling	O
Meadowsweet	O
Red fescue	A
Ribwort plantain	O/LF
Rosebay willowherb	LD
Silverweed	LF
Sneezewort	O
Soft rush	O/LA

Southern marsh orchid	O
Sweet vernal-grass	F/LA
Wild angelica	O/LF
Yorkshire fog	F/LA

3. Roadside hedgerow, unmanaged with rarely occurring common oak and ash. Has been flailed in past, on a bank, no ditch, gappy with no function. Ash dieback very apparent; the ground flora shaded out with much bare ground. Species noted were:

Species	*Frequency*
Ash	O
Bare	A
Bluebell	LF
Bracken	LA
Bramble	A
Common dog violet	O/LF
Dog rose	O/LF
Dog's mercury	LF
Elder	O
Enchanter's nightshade	LF
Greater stitchwort	O
Ground ivy	LF
Hart's tongue fern	O
Hazel	F
Honeysuckle	O
Male fern	O
Rough meadow grass	O

5. Hedgerow boundary between Site and cemetery. Many mature oak and ash trees with an unmanaged understorey of hazel and hawthorn; ash dieback is apparent. Blackthorn is locally abundant and has produced dense scrub encroachment in places. Ground flora largely shaded out, hedge is possibly off site or on Site boundary. Species recorded were:

Species	*Frequency*
Ash	F
Berberis sp	R
Blackthorn	LA
Bluebell	F
Bracken	LA
Bramble	A
Broad buckler fern	O
Common cleavers	A
Common dog violet	LF

Common oak	R
Creeping soft grass	O
Dog rose	LF
Enchanter's nightshade	LF
Foxglove	O
Greater stitchwort	LF
Hart's tongue fern	O
Hawthorn	LF
Hazel	LF
Holly	O/LF
Honeysuckle	LF
Ivy	A
Male fern	O
Rough meadow-grass	LF

10. Hedgerow on a bank, unmanaged and gappy now in dense scrub encroaching into adjacent fields, common oak to eastern end with a canopy of alder and unmanaged shrub species. Species recorded were:

Species	*Frequency*
Alder	O
Bare	A
Blackthorn	O
Bluebell	O/LF
bluebell	A
Bramble	O/LA
Broad buckler fern	O
Common oak	R
Dog rose	O
Enchanter's nightshade	O/LA
Foxglove	O
Goat willow	O
Hazel	A
Hemp agrimony	LF
Holly	F
Honeysuckle	F
Ivy	A
Male fern	O
Male fern	O
Sycamore	O
White bryony	R
Wood avens	O

13. Unmanaged hedgerow with ditch, the ditch draining the fields and supporting water at the time of survey with no specifically associated vegetation. Where unshaded,

opposite golden saxifrage occurs rarely, and great willowherb dominates. In 2009 the survey showed the hedge separating the semi-improved neutral grassland to the east from marshy grassland to the west. The hedgerow now runs largely through dense scrub and the marshy grassland is almost entirely succeeded to secondary woodland dominated by goat willow. The ground flora is largely shaded out with much bare ground and litter, unmanaged hazel and holly form the canopy. occur rarely. Species recorded were:

Species	*Frequency*
Bare/litter	A
Bittersweet	O
Black bryony	O
Blackthorn	LF
Bluebell	F
Bramble	O/LF
Enchanter's nightshade	F
Great willowherb	LA
Hart's tongue fern	F
Hawthorn	O
Hazel	F
Holly	F
Ivy	F/LA
Male fern	F
Opposite-leaved golden-saxifrage	LF

19. Field 2 (see Figure 1 Phase 1 Map), rank grassland heavily encroached with woody and bramble scrub from hedgerows and woody and bramble scrub scattered across the field. Species present include rarely occurring purple moor-grass but timothy was dominant in the summer with false oat-grass far less frequent than in TN 2. The grassland is best described as damp semi-improved neutral grassland. Species present were:

Species	*Frequency*
Bird's-foot trefoil	O/LF
Bittersweet	R
Bramble	F/LA
Broad buckler fern	O
Common dock	F
Common hemp nettle	O/LF
Common marsh bedstraw	F/LA
Common nettle	LA
Common sorrel	LA
Common vetch	R
Creeping bent	LA

Creeping buttercup	LA
Creeping cinquefoil	O
Creeping thistle	LF
Goat willow	F
Greater bird's-foot trefoil	O/LF
Hairy sedge	R
Hemp agrimony	F
Hogweed	O/LF
Lady fern	R
Lady's smock	F
Lesser stitchwort	O
Marsh ragwort	O
Marsh thistle	F/LA
Meadow buttercup	O
Meadow foxtail	A
Ragged robin	R
Ribwort plantain	LA
Rosebay willowherb	LA
Rough meadow grass	O
Soft rush	O/LF
Southern marsh orchid	O
Square stemmed St John's wort	R
Sweet vernal grass	A
Wild angelica	F
Yorkshire fog	F/LA

22. Secondary goat willow woodland with no shrub layer developed on fields; described as marshy grassland in 2009. Canopy dominated by goat willow, closed and even aged, reflecting an age of around 15 years. The woodland is bisected by old field boundaries supporting mature trees and hedgerow species and in the vicinity of these some typical woodland plants have started to colonise drier areas. The ground flora is typical of secondary woodland and is dominated by competitive ruderal species such as bramble and common nettle over large areas, particularly where there are rarely occurring open areas. Species recorded were:

Species	*Frequency*
Bare	F
Bramble	F/LA
Broad buckler fern	O
Common figwort	O
Common nettle	A
Creeping buttercup	A

Enchanter's nightshade	O/LA
Goat willow	A
Herb robert	O
Lady fern	R
Male fern	O
Opposite-leaved golden saxifrage	LA
Red campion	LF
Remote sedge	O/LF
Rough meadow grass	LF
Soft rush	O/LF
Water pepper	O
Wavy bittercress	F
Wood avens	O
Yellow archangel	R

25. Open glade, woody scrub is encroaching and scattered throughout with bramble. Tall herbs, poor marshy grassland. Species recorded were:

Species	*Frequency*
Bird's-foot trefoil	F
Bittersweet	O
Bramble	F
Broad buckler fern	O
Common marsh bedstraw	LF
Common nettle	F/LA
Creeping buttercup	LA
Field rose	R
Great willowherb	A
Hedge bindweed	LA
Hemp agrimony	O
Imperforate St John's wort	O
Marsh thistle	O
Meadowsweet	LF
Ragged robin	O
Soft rush	LF
Southern marsh orchid	O
Wild angelica	O

26. Dense scrub at entrance to Site off Dyffryn Road, heavily disturbed area with concrete platforms in places. Scrub varies from open to very dense. Species recorded were:

Species	*Frequency*
Alder	LA
Black medick	LF
Bramble	O/LD
Broad leaved willowherb	O
Carnation sedge	O
Cock's-foot	LF
Comfrey sp	O/LF
Common chickweed	O
Common figwort	R
Common knapweed	O
Common vetch	O
Creeping cinquefoil	LF
Creeping thistle	F/LA
Curled dock	O
False oat grass	O/LF
Germander speedwell	F
Goat willow	A
Great willowherb	O/LF
Greater bord's-foot trefoil	O
Hawthorn	O
Hemp agrimony	LF
Hogweed	O
Meadow foxtail	LF
Perforated St John's wort	O
Ragged robin	O
Red clover	LF
Smooth hawksbeard	O
Tufted vetch	LF
White clover	LF
Yorkshire fog	LF

27. Nant-Y-Ci stream and associated developing alder woodland. The stream runs in a deep channel with made sides. To the housing side, the banks are frequently block or brickwork. The channels is largely shaded with little aquatic vegetation. The developing alder woodland largely shades the ground flora and this and the shrub layer are poorly developed. Many garden species are present including dense cotoneaster. Species recorded were:

Species	*Frequency*
Alder	LA
Ash	O
Bamboo	O

Bare	F
Berberis sp	R
Bramble	A
Broad buckler fern	O
Common cleavers	O/LF
Common figwort	O
Common lime	O
Common nettle	O/LF
Garden privet	R
Hart's tongue	O/LF
Hawthorn	O
Hemlock water dropwort	O/LA
Ivy	F
Male fern	O
Opposite-leaved golden-saxifrage	O
Rough meadow grass	O

28. Former compound at entrance to Site, re-graded with much bare and disturbed ground with developing ruderal vegetation. Presence of species such as perennial rye grass and ox-eye suggest a possible re-seeding effort. Species recorded include:

Species	*Frequency*
Annual meadow grass	F
Bird's-foot trefoil	LF
Black mustard	O
Cock's-foot	O
Colt's-foot	F
Comfrey sp	O
Creeping bent	R
Creeping cinquefoil	O
Creping buttercup	LA
Cut leaved cranesbill	O
False brome	O
False oat-grass	O
Geranium sp	R
Great willowherb	O
Greater plantain	F
Hedge woundwort	O
Hemp agrimony	O
Meadow vetchling	R
Ox-eye	R
Perennial rye-grass	O
Ribwort plantain	O
Spear thistle	O

White clover	A

APPENDIX 3
LIST OF PLANT SPECIES RECORDED IN THE SURVEY

Species	*Scientific Name*
Alder	*Alnus glutinosa*
Annual meadow grass	*Poa annua*
Ash	*Fraxinus excelsior*
Bamboo	*Bambusa* sp
Berberis sp	*Berberis* sp
Bird's-foot trefoil	*Lotus corniculatus*
Bittersweet	*Solanum dulcamara*
Black bryony	*Dioscorea communis*
Black medick	*Medicago lupulina*
Black mustard	*Brassica nigra*
Blackthorn	*Prunus spinosa*
Bluebell	*Hyacinthoides non-scripta*
Bracken	*Pteridium aqualinum*
Bramble	*Rubus fruticosus* agg
Broad buckler fern	*Drypoteris dilatate*
Broad-leaved willowherb	*Epilobium montanum*
Carnation sedge	*Carex panicea*
Cock's-foot	*Dactylis glomerata*
Colt's-foot	*Tussilago farfara*
Comfrey sp	*Symphytum officinale* agg
Common chickweed	*Stellaria media*
Common cleavers	*Gallium aparine*
Common dock	*Rumex obtusifolius*
Common dog violet	*Viola riviniana*
Common figwort	*Scrophularia nodosa*
Common hemp nettle	*Galeopsis tetrahit*
Common knapweed	*Centaurea nigra*
Common lime	*Tilia x europaea*
Common marsh bedstraw	*Gallium palustre*
Common nettle	*Urtica dioica*
Common oak	*Quercus robur*
Common ragwort	*Scenecio jacobaea*
Common sorrel	*Rumex acetosa*
Common spotted orchid	*Dactylorhiza fushsii*
Common vetch	*Vicia sativa*
Creeping bent	*Agrostis stolonifera*
Creeping buttercup	*Ranunculus repens*
Creeping cinquefoil	*Potentilla reptans*
Creeping soft grass	*Holcus mollis*
Creeping thistle	*Cirsium arvense*
Curled dock	*Rumex crispus*
Cut leaved cranesbill	*Geranium dissectum*
Dog rose	*Rosa canina* agg
Dog's mercury	*Mercurialis perennis*

Elder	*Sambucus nigra*
Enchanter's nightshade	*Circaea lutetiana*
False brome	*Brachypodium sylvaticum*
False oat grass	*Arrhenatherum elatius*
Field rose	*Rosa arvensis* agg
Foxglove	*Digitalis purpurea*
Garden privet	*Ligustrum ovalifolium*
Geranium sp	*Geranium* sp
Germander speedwell	*Veronica chamaedrys*
Goat willow	*Salix caprea*
Great willowherb	*Epilobium hirsutum*
Greater bird's-foot trefoil	*Lotus pedunculatus*
Greater plantain	*Plantago major*
Greater stitchwort	*Stellaria holostea*
Grey willow	*Salix cinerea*
Ground ivy	*Glechoma hederacea*
Hairy sedge	*Carex hirta*
Hart's tongue fern	*Asplenium scolopendrium*
Hawthorn	*Crataegus monogyna*
Hazel	*Corylus avellana*
Hedge bindweed	*Calystegia sepium*
Hedge woundwort	*Stachys sylvatica*
Hemlock water dropwort	*Oenanthe crocata*
Hemp agrimony	*Eupatorium cannabinum*
Herb robert	*Geranium robertianum*
Hogweed	*Heracleum sphondylium*
Holly	*Ilex aquifolium*
Honeysuckle	*Lonicera periclymenum*
Imperforate St John's wort	*Hypericum maculatum*
Ivy	*Hedera helix*
Lady fern	*Athyrium filix-femina*
Lady's smock	*Cardamine pratensis*
Lesser celandine	*Ranunculus ficaria*
Lesser spearwort	*Ranunculus flammula*
Lesser stitchwort	*Stellaria graminea*
Male fern	*Dryopteris filix-mas*
Marsh ragwort	*Scenecio aquaticus*
Marsh thistle	*Cirsium palustre*
Meadow buttercup	*Ranunculus acris*
Meadow foxtail	*Alopecurus pratensis*
Meadow vetchling	*Lathyrus pratensis*
Meadowsweet	*Filipendula ulmaria*
Opposite-leaved golden saxifrage	*Chrysosplenium oppositifolium*

Ox-eye	*Leucanthemum vulgare*
Perforated St John's wort	*Hypericum perforatum*
Ragged robin	*Silene flos-cucui*
Red campion	*Silene dioica*
Red clover	*Trifolium pratense*
Red fescue	*Festuca rubra* agg
Remote sedge	*Carex remota*
Ribwort plantain	*Plantago lanceolata*
Rosebay willowherb	*Chamerion angustifolium*
Rough meadow grass	*Poa trivialis*
Silverweed	*Potentilla anserina*
Smooth hawksbeard	*Crepis capillaris*
Sneezewort	*Achillea ptarmica*
Soft rush	*Juncus effusus*
Southern marsh orchid	*Dactylorhiza praetermissa*
Spear thistle	*Cirsium vulgare*
Square stemmed St John's wort	*Hypericum tetrapterum*
Sweet vernal grass	*Anthoxanthum odoratum*
Sycamore	*Acer psuedoplatanus*
Tufted vetch	*Vicia cracca*
Water pepper	*Persicaria hydropiper*
Wavy bittercress	*Cardamine flexuosa*
White bryony	*Bryonia dioica*
White clover	*Trifolium repens*
Wild angelica	*Angelica sylvestris*
Wood avens	*Geum urbanum*
Yellow archangel	*Lamium galeobdolon*
Yorkshire fog	*Holcus lanatus*

APPENDIX 4
PHOTOGRAPHS

The scrub at TN 1, top end of March, bottom June 2021

Views across the Application Area TN 2, towards the cemetery hedgerow at TN 5 (top Feb ’21, bottom June 21)

Looking across the grassland at TN 19 to the defunct hedgerow TN 10
Top, Feb 2021, bottom, June 2021

Secondary woodland TN 22

Marshy grassland, TN 25

The wooded Nant-Y-Ci corridor

The scrub at TN 26

The entrance to the Site, TN 28, regraded and seeded

Cotoneaster and other garden escapes present in the Nant-Y-Ci corridor

APPENDIX 5
REPTILE PRESENCE – ABSENCE SURVEY REPORT
HAWKESWOOD ECOLOGY 2021

HAWKESWOOD ECOLOGY
Specialists in Ecological Survey and Assessment

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REPTILE PRESENCE/ABSENCE SURVEY,

LAND AT DYFFRYN ROAD, AMMANFORD.

ON BEHALF OF

CORONADO PROPERTY DEVELOPMENTS LTD

August 2021

Ref: HE/39/2020/reptiles
Issue 1
Draft

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Third Party Disclaimer

We confirm that in preparing this Report we have exercised reasonable skill and care, taking into account the project objectives, the agreed scope of the work, prevailing site conditions and the degree of manpower and resources allocated to the project.

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. Surveys older than this are unlikely to be accepted by a Local Planning Authority or Natural Resources Wales as viable documentation.

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FIGURES

Figure 1 Reptile refugia layout and results showing approximate Phase 1 application area.

APPENDICES

Appendix 1 Guide to suitable reptile survey weather conditions

Appendix 2: Typical reptile proof fencing specification

SUMMARY

Hawkeswood Ecology carried out an Ecological Assessment on land at Dyffryn Road, Ammanford in early 2021. Amongst recommendations made for further survey was that a reptile presence/absence survey should be carried out. Subsequently survey was carried out over the period 23rd April to 25th May 2021, the refugia were laid out on 1st April 2021.

The Site is a derelict agricultural area and adjacent woodlands. The fields have been unmanaged for a period of years and are succeeding to bramble and woody scrub with densely vegetated field boundaries encroaching up to 10 to 15 metres from the relict hedgerows. In the northeast of the Site fields, formerly identified as semi-improved neutral grassland and marshy grassland, have now succeeded to goat willow dominated secondary woodland. The refugia were laid in the remaining three open fields where it was considered that suitable habitat for reptiles persisted.

One hundred felt mats were laid out across the Site and seven survey visits were undertaken. Slow worm and grass snake were identified from across the Site. Given the difficulty in access across the Site, no real estimate of population size could be made even though a large number of mats was used. However, given the habitat suitability and species found, it is estimated that the Site supports at least a 'good' population of slow worm and grass snake (Froglife 1999). No other reptile species were noted during the visits.

A reptile translocation exercise will be necessary to prevent killing or injuring slow worms and grass snakes, species which are fully protected under Schedule 5 of The Wildlife and Countryside Act 1981 (as amended), prior to the development works commencing.

The conclusions of this report are considered valid for two years from the survey date noted in Section 1 of the report.

1 INTRODUCTION

1.1 Following an Ecological Assessment undertaken in March 2021, Hawkeswood Ecology was instructed by Coronado Property Developments Ltd to carry out a reptile presence/absence survey on land at Dyffryn Road, Ammanford, approximate central Grid Reference SN 618 125. It is proposed to develop the Site for residential purposes. This report refers in particular to an application for phase 1 of the development. However, the survey was undertaken over a much wider area and the results refer to all parts of the Site (See Figure 1, which shows the current Phase 1 application area and the wider survey area).

1.2 The Site consists largely of derelict fields and woodland with relict hedgerows. To the south is an area of woodland with both semi-ancient natural woodland and secondary woodland, and fields to the north-west formerly identified as grassland have now succeeded to secondary goat willow dominated woodland.

1.3 The areas considered suitable for reptiles, and for survey, were the three more open fields making up the bulk of the development site; this includes the Phase 1 Build area.

1.4 The objectives of the surveys were to:

- To undertake a reptile presence/absence survey;
- To assess the potential ecological impacts of the proposed works on reptiles;
- To provide recommendations to mitigate the proposed works.

1.5 The reptile presence/absence surveys were undertaken over a period from 23rd April to 25th June 2021, the mats having been set out on 1st April 2021.

2 SURVEYOR EXPERIENCE

2.1 The surveyor and report author is Eric Hawkeswood. Eric has undertaken a significant amount of reptile work in recent years from initial survey to animal translocations. He has been a professional in the nature conservation field for thirty two 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 METHODOLOGY AND CONSTRAINTS

Reptiles

3.1 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).

3.2 Felt mats were used as refugia and placed into position on 1st April 2021. The refugia were visited on seven occasions in suitable weather conditions, with air temperatures between 9 and 20ºC

generally with bright conditions, as described in the referenced published guidance. Appendix 1, courtesy of Chris Gleed-Owen, demonstrates suitable weather conditions and timing for survey throughout the reptilian activity period of March to October.

3.3 A total of 100 refugia were used across suitable areas of the Site. Locations of the refugia are shown in Figure 1. All were placed in the grassland or adjacent to the encroaching 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.

3.4 The Site area is approximately 7.0 hectares of which a majority was densely scrubbed or wooded leaving around 2.0 hectares over three fields which were considered suitable habitat for supporting reptiles. The Froglife guidelines suggest placing 5-10 refugia per hectare for adequate survey. The density of 100 refugia used over an area of approximately 2 hectares at this Site gives a density of approximately 50 refugia per hectare, markedly increasing the chances of finding any animals present.

Constraints

3.5 Lizards have a good sense of hearing, snakes are deaf but are very sensitive to vibrations. Approach to the refugia was undertaken as carefully as possible, but given the rank nature of the grassland and the proximity of scrub, a very quiet and steady approach was difficult to maintain.

4 DESK TOP STUDY FINDINGS

4.1 Only 1 record of slow worm is reported from a site approximately 600 metres to the north. Two records of common toad and one record of palmate newt are reported, the nearest being 600 metres to the north and 300 metres to the west respectively.

5 FIELD SURVEY FINDINGS

5.1 The Site sits to the immediate east of Dyffryn Road with woodland to the west, east and southeast, a cemetery to the north and housing to the south. It lies on the outside of Ammanford to the west with much ribbon development along Dyffryn Road towards Saron.

Reptiles

5.2 Table 1 below gives the conditions at the time of survey, Table 2, the survey results:

Table 1: Date and weather conditions during survey.

Date	Time and Weather conditions
23/04/2021	09.50; Dry, sunny with 10% high cloud, 12ºC, F1/2 SW breeze.
25/04/2021	10.30: Cloudy after a bright start, sunny intervals with light rians becoming persistent. F3 NW breeze.
01/06/2021	08.30; Clear and sunny, 17ºC, F2 W breeze, dry.
05/06/2021	09.00; Cloud breaking, sunny spells; 14ºC, F1 W breeze, dry.
22/06/2021	09.00; 10% cloud, 14ºC, F3/4 cooling N breeze, dry.
23/06/2021	09.30; Bright with increasing cloud, 16ºC, F2 W breeze, dry.
25/06/2021	10.00; Cloudy with sunny intervals, 14ºC, F3 NW breeze, dry.

5.3 The survey recorded slow worms and grass snakes across the wider site and from the area of the Phase 1 application. The approximate locations the animals were recorded from are shown in Figure 1. Table 2 below gives the survey results. SW refers to slow worm, GS to grass snake:

Table 2: Survey Results

Date	Field 1	Field 2	Field 3	Totals	Comments
23/04/2021	2 SW		1 SW	3	1 adult female and one juvenile slow worm in field 1, one adult female slow worm in Field 3.
25/04/2021		1 GS		1	Mature grass snake in Field 2.
01/06/2021	1SW, 1GS		1SW	3	One adult female slow worm and juvenile grass snake in Field 1, Juvenile slow worm in field 3.
05/06/2021	4SW	1 SW, 1 GS	2 SW, 1GS	9	4 females Field 1, 1 adult male slow worm and 1 young GS in Field 2, 1 adult female and 1 juvenile slow worm in Field 3 plus an adult grass snake
22/06/2021	3 SW		3 SW and 1 GS	7	2 adult and one juvenile slow worm in Field 1, 3 adult female slow worm and one young grass snake in field 3.
23/06/2021			3 SW	3	2 adult females, 1 adult male
25/06/2021	2 SW		1 SW	3	2 adult female slow worm in Field 1, 1 adult female in field 3.

5.4 Adventitious sightings included a grass snake in field 2 during a dormouse search and slow worms under the felt mats during bat surveys in the evening.

5.5 The survey results found slow worms and grass snakes across the Site and it is considered that they are likely be found wherever suitable habitat persists. Even though a larger than recommended number of refugia placed out per hectare, an estimation of population size was not considered possible. However, it is thought that the populations are most probably ‘good’ at least when compared to the Froglife guidelines.

6. DISCUSSION AND IMPACT ASSESSMENT

6.1 Slow worms and grass snakes were found across the wider Site and in the area of the Phase 1 application area. The approximate locations of animals found across the Site are shown in Figure 1. The absence of animals from an area cannot rule out the potential for them to be in areas where no positive results were found and it is considered likely that they are present in all areas possibly including the areas of dense bramble and bracken scrub.

6.2 Figure 1 shows the approximate locations of refugia where reptiles were found and it is possible that where an animal was located at the same refugia on multiple visits the same animal may be being seen.

6.3 As the Site was historically pasture or meadow, it is likely that the populations present represent a long term community. The removal of management and ensuing encroachment of dense woody scrub may have reduced the viability of the Site for some reptiles, but the relatively dense and lush grasses will be attractive to slow worms, and their population may well have grown following site abandonment.

6.4 The presence of grass snake across the Site demonstrates the damp and wet nature of many parts of the Site and the presence of ditches in the adjacent wooded areas will also help support this species even in the absence of standing open water which it seems to favour.

6.5 Although a presence/absence type of survey cannot make quantitative assumptions regarding the size of reptile populations on Site, some assessment can be made with care using the Site Assessment Criteria developed by Froglife. However, in this instance, a quiet approach to the refugia was barely possible due to the nature of the vegetation and as lizards have good hearing and snakes are sensitive to vibration, there is always the possibility that animals escaped without being observed. The good habitat present in large parts of the survey area may also have reduced dependency on artificial refugia, although the provision of warming felt mats would have been a benefit.

6.6 Therefore caution should be taken when comparing results against the Froglife criteria (Froglife, 1999), which are qualitative in any event. When compared with the guidelines the surveyed areas of the Site would be considered to support a low population of reptiles in readily identifiable areas. However, when taking into account the constraints to the survey mentioned above, a realistic assessment would be at least a ‘good’ population and this is important when considering the effort required in any ensuing translocation exercise. The criteria are outlined in paragraph 6.7 and in Table 3.

6.7 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 5)

4. supports an assemblage of species scoring least 4 (see table 5)
5. does not satisfy 1 – 4 but which is of particular regional importance due to local rarity.

Table 3: 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

6.8 Figures in Table 3 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.

6.9 In this case, the maximum number of animals found in any one survey visit was 9, 7 slow worms and 2 grass snakes. Ostensibly using the Froglife guidelines, this and the following visit with 7 animals would suggest a good population, the other visits would suggest a low population. Given the discussed constraints Hawkeswood Ecology considers the site to support at least a good population of slow worms and grass snakes across the Site.

6.10 The Site is likely to be of **local significance** for slow worms and grass snake; with poor connectivity to other areas population recruitment is likely to be limited, but the on Site population is clearly self-sustaining. The loss of the area to development is likely to result in **minor significant** impact in a local context but be of **no** significance in a wider context.

7 RELEVANT LEGISLATION AND POLICIES

7.1 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)).

7.2 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.

7.3 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.

TAN 5

7.4 Planning Policy Wales Technical Advice Note (TAN) 5, Nature Conservation and Planning provides advice on how the planning system should contribute to biodiversity protection and enhancement. TAN 5 recognises the importance of biodiversity and the enjoyment of it. TAN 5 requires Local Planning Authorities (LPA's) to protect and enhance biodiversity during the

planning process and to encourage sustainable developments. It also requires LPA's to ensure that protected Sites are properly accounted for within the planning system.

8 RECOMMENDATIONS

8.1 An Ecological Clerk of Works (ECW) will be appointed for the duration of the project. Currently a search for a local receptor site is underway although a suitable translocation area has been identified on a nearby nature reserve; this is subject to survey and possible enhancement works.

8.2 Capture methods will follow guidelines from the Herpetofauna Groups of Britain and Ireland (1998). Hawkeswood Ecology assume a good level population of both slow worms and grass snake, which calls for 50 refugia per hectare (see paragraph 8.5); however, a figure of at least 100 refugia per hectare is recommended, the greater number increasing capture efficiency. Capture will be dependent upon weather conditions. The proposed capture area is in this instance, the phase 1 application area and is approximately 1.9 hectares including unsuitable habitat.

Site preparation and Capture

8.3 The vegetation will be carefully cleared using handheld equipment. The vegetation will not be cut lower than 10 centimetres. The timing of this clearance will be dependent upon the outcomes of other currently ongoing surveys (in particular dormouse survey) and the breeding bird season, which must be avoided.

8.4 One way reptile proof fencing will be erected to isolate the capture area to prevent animals moving to other parts of the Site once disturbed. The ECW will identify the lines along which the reptile proof fencing will be erected and oversee its erection. Specifications for suitable reptile proof fencing are shown in Appendix 2.

8.5 Felt refugia mats will be laid out at a density higher than recommended in the acknowledged literature. Refugia will be left in place for a minimum of 7 days before capture begins. The use of around 200 mats is proposed. By using more than the referenced number of refugia for the size of the capture areas, it is hoped that the capture time can be shortened from that recommended.

8.6 Capture will be undertaken in suitable weather conditions, generally with air temperatures between 9 and 20ºC with warm conditions or sunny intervals, as described in the referenced published guidance but also after showers if the mats are warming in sun. Capture of the animals will be undertaken only by the ECW and other suitably experienced personnel under the charge of the ECW.

8.7 Capture of animals under/on felts will be undertaken for a minimum period of 30 days in accordance with current best practice. The Site will be considered to be cleared when five consecutive days negative checks have occurred; 30 days capture effort is the absolute minimum number of days. If five consecutive days without capture are not achieved, or animals are caught after day 25, capture must continue until a period of five clear days is achieved. The best periods for capture are between mid-March and June and from late August to late September. However, capture can take place across the activity period if weather conditions are suitable. Should it

become apparent that the population is greater than expected the number of visits will be increased proportionately.

Translocation:

8.8 A local receptor site is being searched for currently, and it is hoped a nature reserve approximately 200 yards from the Site will prove suitable. Surveys are proposed for the potential receptor site during the current reptile survey season before the end of September.

8.9 Final clearance of surface vegetation to bare ground following clearance of reptiles can then take place under ecological supervision in appropriate weather conditions. There are no restrictions with regard to reptiles in the proposed development of the Site. However, consideration to the possible colonisation of the Site at some future point should be given in the landscape design if possible. This could include the presence of grassed areas outside the housing areas that are not subject to formal maintenance.

9 CONCLUSIONS

9.1 The Site supports slow worms and grass snakes which are protected under British law from killing or injury. The Site will need to be cleared of reptiles under a translocation strategy before any development can take place.

9.2 A receptor site has hopefully been found locally and surveys are to be undertaken to assess suitability and the presence of animals currently.

10 BIBLIOGRAPHY

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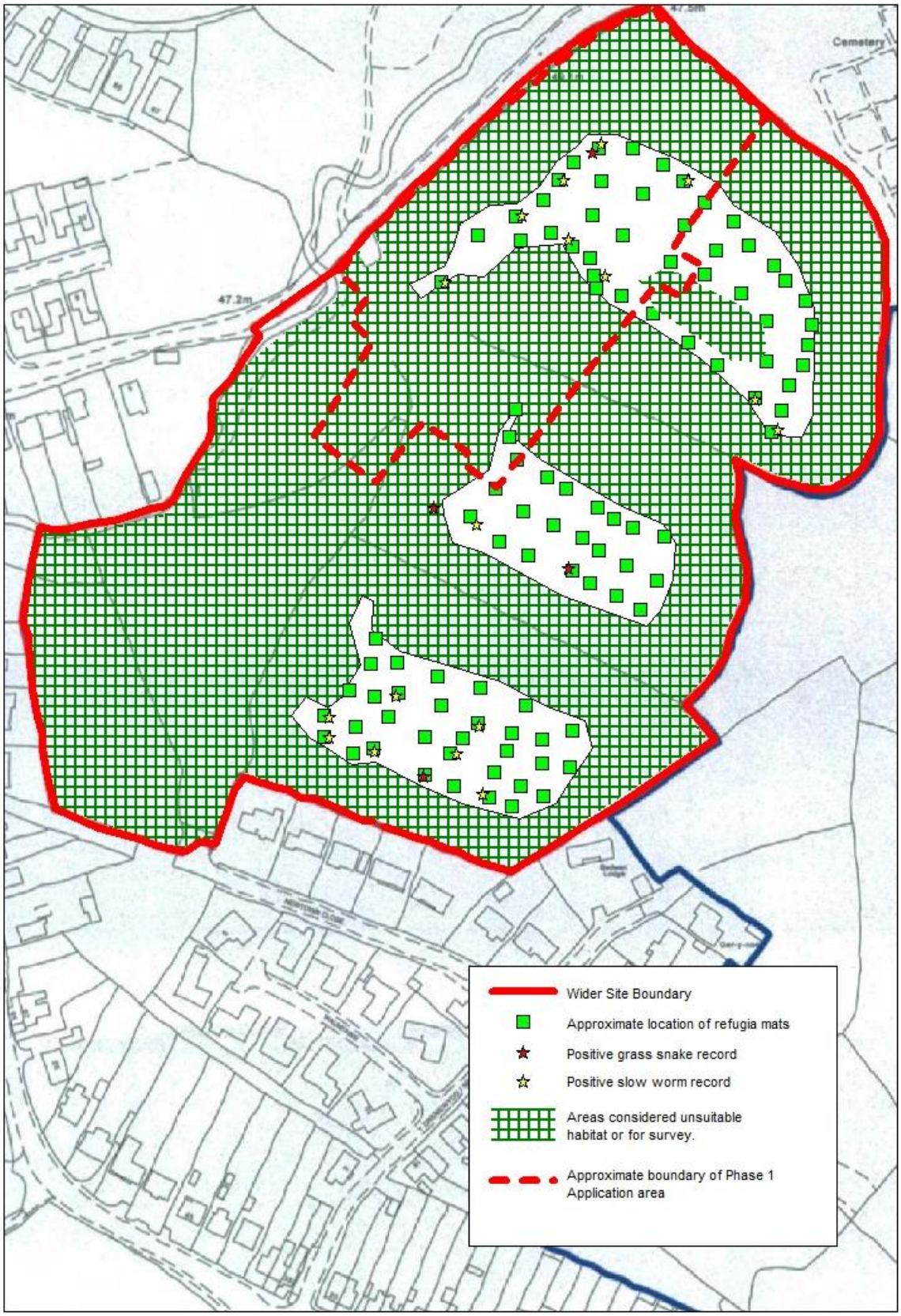
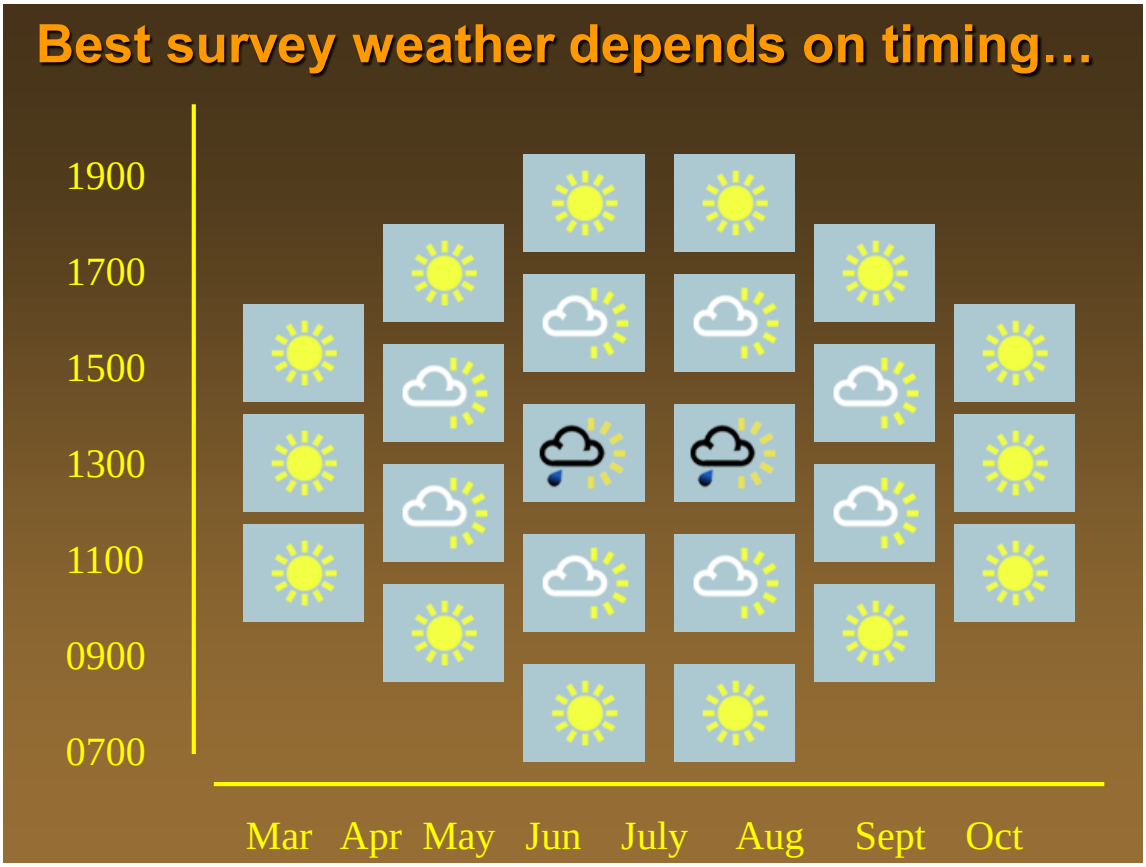
FIGURE 1:
REPTILE REFUGIA LAYOUT AND RESULTS SHOWING APPROXIMATE PHASE 1 APPLICATION AREA.

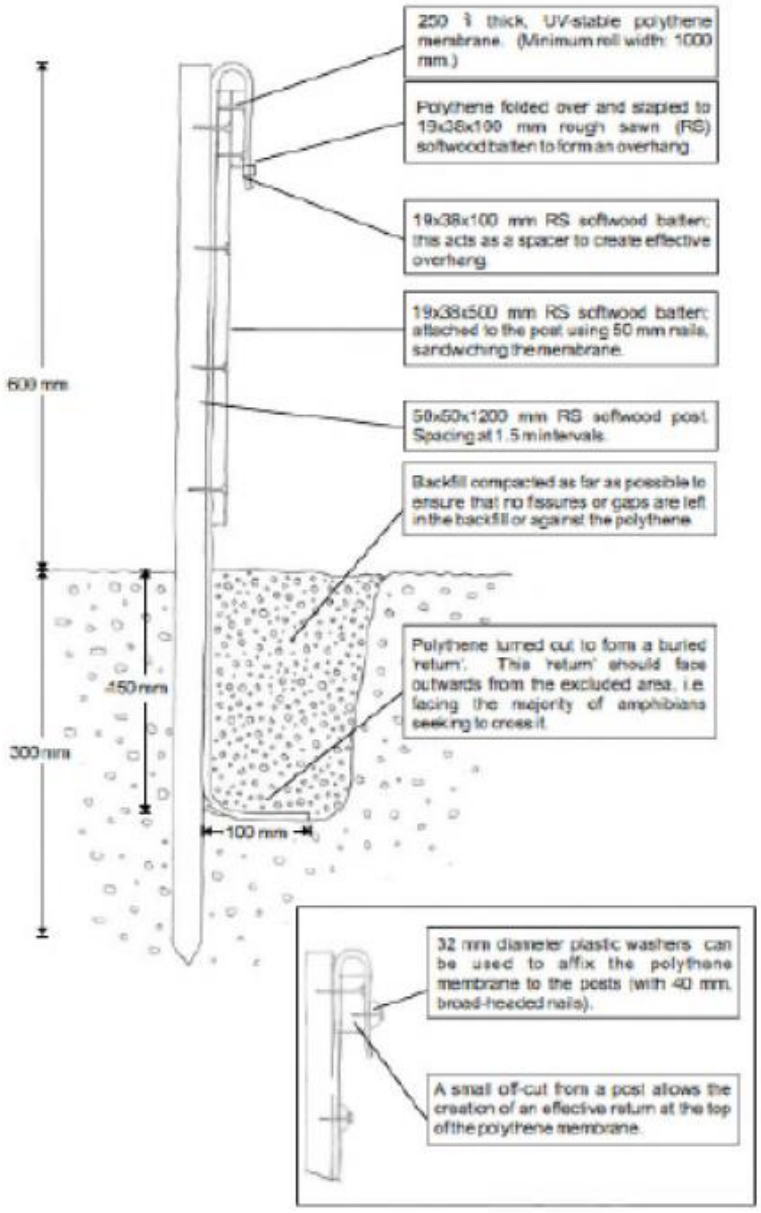

Cemetery
47.2m
Wider Site Boundary
Approximate location of refugia mats
Positive grass snake record
Positive slow worm record
Areas considered unsuitable habitat or for survey.
Approximate boundary of Phase 1 Application area

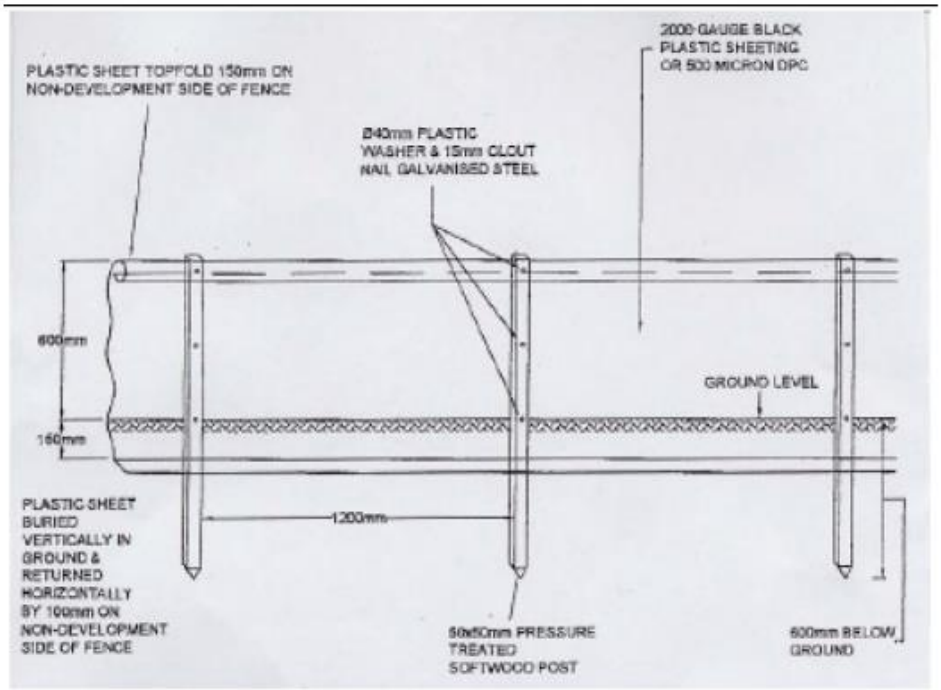
APPENDIX 1
GUIDE TO SUITABLE REPTILE SURVEY WEATHER CONDITIONS

Guide to Suitable Reptile Survey Conditions (after Chris Gleed-Owen)



APPENDIX 2
TYPICAL REPTILE PROOF FENCING SPECIFICATION


250 µ thick, UV-stable polythene membrane. (Minimum roll width: 1000 mm.)
Polythene folded over and stapled to 19x38x100 mm rough sawn (RS) softwood batten to form an overhang.
19x38x100 mm RS softwood batten; this acts as a spacer to create effective overhang.
19x38x600 mm RS softwood batten; attached to the post using 50 mm nails, sandwiching the membrane.
50x50x1200 mm RS softwood post. Spacing at 1.5 m intervals.
Backfill compacted as far as possible to ensure that no fissures or gaps are left in the backfill or against the polythene.
Polythene turned out to form a buried 'return'. This 'return' should face outwards from the excluded area, i.e. facing the majority of amphibians seeking to cross it.
600 mm
450 mm
300 mm
100 mm
32 mm diameter plastic washers can be used to affix the polythene membrane to the posts (with 40 mm broad-headed nails).
A small off-cut from a post allows the creation of an effective return at the top of the polythene membrane.


PLASTIC SHEET TOPFOLD 150mm ON NON-DEVELOPMENT SIDE OF FENCE
2000 GAUGE BLACK PLASTIC SHEETING OR 500 MICRON DPC
Ø40mm PLASTIC WASHER & 15mm CLOUT NAIL GALVANISED STEEL
600mm
GROUND LEVEL
150mm
PLASTIC SHEET BURIED VERTICALLY IN GROUND & RETURNED HORIZONTALLY BY 100mm ON NON-DEVELOPMENT SIDE OF FENCE
1200mm
50x50mm PRESSURE TREATED SOFTWOOD POST
600mm BELOW GROUND

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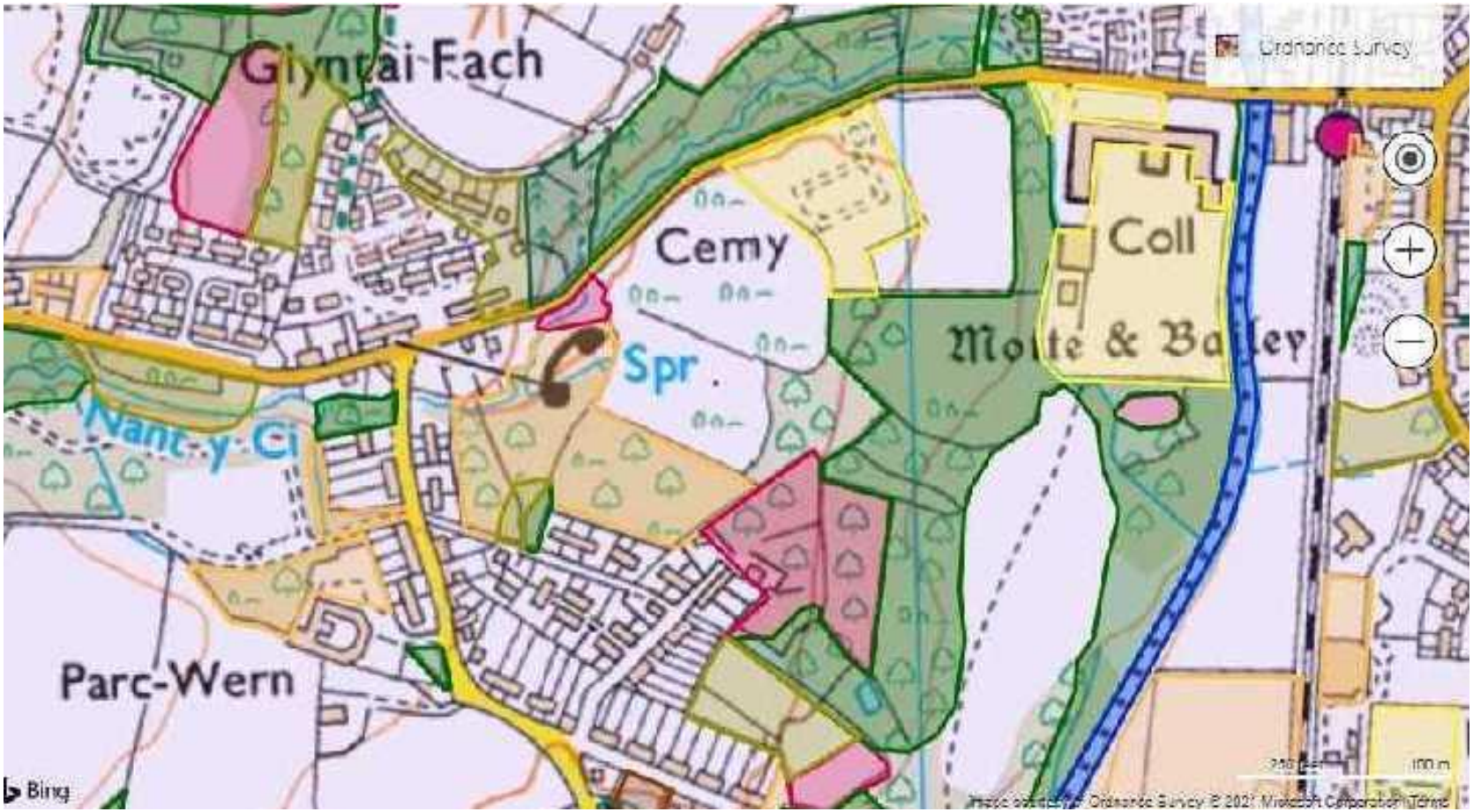
APPENDIX 6:
NRW HABITAT MAP:


Glyntai Fach
Cemy
Coll
Spr
Parc-Wern
Bing
Ordnance Survey

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