

HAWKESWOOD ECOLOGY

Specialists in Ecological Survey and Assessment

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PRELIMINARY ECOLOGICAL APPRAISAL AND REPTILE PRESENCE – ABSENCE SURVEY LAND AT NANT-Y-CAFN, SEVEN SISTERS.

ON BEHALF OF

IPLAN ARCHITECTURE

September 2022

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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 and reptile presence-absence survey on land at Nant-Y-Cafn, Seven Sisters. The Site is a small, abandoned area of ground amidst a mixture of recent and older developments at the south of the village. It is proposed to develop the Site for residential purposes; currently it is dominated by rank unmanaged vegetation with some scrub colonisation.

The Site shows a mix of habitats that may hold potential for reptiles and a reptile presence – absence survey was also undertaken to investigate this. It is an isolated plot with poor connectivity to surrounding semi-natural habitats.

Habitats present are rank grassland, goat willow dominated scrub and ornamental shrubberies which are largely unmanaged and bound the Site. It is generally wet and has been subject to disturbance as evidenced by a drain near the centre of the Site. Historically, it would have been part of the rhos pasture that still remains on less improved agricultural areas locally.

The mixture of habitats meant consideration of reptiles was important. A reptile presence – absence survey proved negative with no animals found on Site.

There were no Ecological considerations found that would prevent the development of the Site as proposed.

1 INTRODUCTION

- 1.1 Hawkeswood Ecology was instructed by Iplan Architecture Ltd to carry out a Preliminary Ecological Appraisal (PEA) on land at Nant-Y-Cafn, Seven Sisters. It is proposed to develop the Site for residential purposes. The Grid reference is SN 809 076 and the Site sits on the southern boundary of Seven Sisters in ribbon development along the Dulais Road.
- 1.2 The Site consists of approximately 0.15 hectares of unmanaged land bounded to the west by the main Dulais Road and to the north by a service road to industrial units and health care service centres. To the east is an industrial unit with car parking and ornamental shrubbery and to the south a house and garden. Mixed rough pasture, rhos pasture and modified grassland lies beyond with areas of woodland and stream.
- 1.3 The objectives of the survey are:
- To ascertain the habitats and species present within the Site;
 - To assess the ecological and nature conservation value of the Site;
 - To undertake a reptile presence-absence assessment;
 - To assess the potential ecological impacts of any proposed development;
 - To provide recommendations to mitigate the proposed works.
- 1.4 The PEA was carried out on 1st June 2022; the reptile survey was undertaken over the period 14th June to 7th August 2022 with the mats set out on 1st June 2022.

2 SURVEYOR 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 been a professional in the nature conservation field for thirty three 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

Desktop Study

- 3.1 The South East Wales Biodiversity Records Centre (SEWBReC) was asked to provide records of from a radius of 2 kilometres of the Site. Records post 2000 were considered, those of earlier date were not considered unless of specific interest.

Preliminary Ecological Appraisal

- 3.2 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 considering 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 2) and each habitat was recorded using Target notes (Appendix 3); a species list of plants identified during survey is given in Appendix 4 and photographs are given in Appendix 5.

- 3.3 In addition, the Site was assessed for its potential to support protected species.

Reptiles

- 3.4 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).
- 3.5 Felt mats were used as refugia and placed into position on 1st June 2022. The refugia were visited on seven occasions in suitable weather conditions, with air temperatures between 9 and 20°C 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.
- 3.6 A total of 25 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.
- 3.7 The Site area is approximately 0.25 hectares, the Froglife guidelines suggest placing 5-10 refugia per hectare for adequate survey. The density of 25 refugia used over an area of approximately 0.25 hectares at this Site gives a density of approximately 100 refugia per hectare, markedly increasing the chances of finding any animals present.

Constraints

- 3.8 No specific constraints to the survey were noted.

4 DESKTOP STUDY FINDINGS

- 4.1 SEWBrEC reported a total of 276 Priority and Protected Species from within or just outside the 2 kilometre search area. No records were reported from the proposed development Site itself. The closest bat record was from approximately 100 metres south of the Site in housing. Two other suspected roosts are reported within 200 metres south of the Site, both of unspecified species of bat. A further roost of 3 unspecified bats was reported 300 metres east of the Site. All other bat records were over 1.5 kilometres distant with common and soprano pipistrelle, a *Myotis* species bat and brown long-eared were noted. At 3.5 kilometres to the north, a lesser horseshoe bat was recorded around the Ystradgynlais conurbation.
- 4.2 Other relevant Protected and Priority Species noted include a number of commonly occurring bird species, including dunnock, house sparrow and starling, common frog and common toad (both over 150 metres distant), Small heath butterfly and bluebell and eyebright (plants).

- 4.3 The nearest reptile record is of common lizard nearly 2 kilometres from the Site.
- 4.4 Of 104 Species of Conservation Concern records reported, relevant species relate to birds with a number of commonly occurring species reported., These include mistle thrush, willow warbler, green woodpecker and lesser redpoll. Species of local concern relevant to the Site include pied wagtail great tit, coal tit, goldfinch and sparrowhawk.
- 4.5 A number of invasive species are noted, with Japanese knotweed and Himalayan balsam associated with the Afon Dulais which lies approximately 200 metres west of the Site at its closest approach. Many other species were recorded locally including Japanese rose, Himalayan honeysuckle and *Crocoshia* species.

Designated Sites

- 4.6 The Site lies just south of Nant-Y-Cafn Site of Importance for Nature Conservation (SINC) SINC (cited for lowland dry acid grassland, lowland heath, invertebrates and purple moor-grass and rush pasture) and just north of Ynysdawle SINC (cited for lowland dry acid grassland and purple moor-grass and rush pasture), both approximately 50-100 metres distant.

Habitats

- 4.7 The Site is identified as being amenity grassland in Phase 1 Habitat data supplied.
- 4.8 SEWBRc data is confidential and cannot be released into the public domain without prior permission in writing from SEWBRc. Hawkeswood Ecology holds the data on the client's behalf for one year (in accordance with conditions) in case of further query.

5 FIELD SURVEY FINDINGS

Preliminary Ecological Appraisal

- 5.1 The survey area consists of a piece of land dominated by rank grassland with areas of amenity shrubbery and goat willow colonisation; the site is unmanaged. It sits on a road corner with developments to the east and south. Beyond the developed areas lies open countryside with semi-natural habitats such as rhes pasture and semi-natural ancient woodland; the Afon Dulais flows approximately 200 metres to the west. Target Notes can be found in Appendix 2. See Figure 1, Phase 1 map and Appendix 4 for photographs.

Species Poor Improved Grassland

- 5.2 The grassland is best described as species poor improved (Target Note 2) and dominates the bulk of the Site. It is unmanaged and there is some scrub colonisation. It is generally wet and has been disturbed. Species on Site indicate the damp nature of the ground with a large areas of false fox-sedge dominant near a low level drain cover; this area appears to be subject to occasional flooding. Species such as meadowsweet, compact rush, soft rush and oval sedge indicate the damp nature of the ground. Other species present include common knapweed, which is frequent across the grassland, red clover and meadow vetchling. Southern marsh orchid occurs rarely. The disturbed and unmanaged nature of the Site is typified by the presence of curled and common dock, false oat grass and silverweed. Garden plants from garden refuse tipping and encroachment include creeping jenny and a variegated form of reed canary grass.

Shrubberies

- 5.3 The boundaries alongside the service road and car park have been planted with cultivated shrubs (Target Note 1). The shrubberies are poorly managed and silver birch and ash are colonising along with goat willow. Cultivars include varieties of dogwood and blackberry. Ground cover includes bramble, giant horsetail, soft rush and rarely occurring southern marsh orchid.

Scrub Woodland

- 5.4 At Target Note 3 lies an area of young semi-mature goat willow. It is dense and shades out the undergrowth. In open glades ground cover is present and includes meadowsweet, wild angelica, marsh thistle and bird's foot and greater bird's-foot trefoil.

Reptile Presence – Absence Survey

- 5.5 Table 1 below gives the conditions at the time of survey; the mats were laid out on 1st June 2022:

Table 1: Date and weather conditions during survey.

Date	Time and Weather conditions
14/06/22	09.50; Dry, broken cloud, 17°C, F1/2 SW breeze.
21/06/22	10.00; Broken cloud, sunny intervals, F1 NE breeze.
07/07/22	11.00; Breaking cloud, 17°C, F1 NW breeze, dry.
19/07/22	08.00; Cloud breaking, sunny spells; 17°C, F1 W breeze, dry.
25/07/22	12.00; Breaking cloud, 17°C, F2 SW breeze, dry.
26/07/22	09.30; Bright with increasing cloud, 16°C, F2 W breeze, dry after early light showers.
07/08/22	09.30; Clear, 15°C, F1 NE breeze, dry.

- 5.6 The survey proved negative with no animals found under or on the refugia or seen around the Site.

Summary

- 5.7 The Site is a small unmanaged area of open space on the side of the busy Dulais Road. It has been disturbed and is subject to scrub encroachment with unmanaged amenity shrubberies on two boundaries. It supports a number of broad leaved species and in the main is best described as poor semi-improved grassland with scrub.

- 5.8 A reptile presence – absence survey found no evidence of reptiles on Site.

Fauna

- 5.9 Faunal species observed during the survey were largely limited to a number of commonly occurring bird species either on or adjacent to or overflying the local area. Species noted on or near the Site were house sparrow, great tit, wren, dunnock and blackbird. Swallow, buzzard and red kite were observed over flying the wider area locally along with lesser black backed gull.

- 5.10 In addition a small heath butterfly was recorded.

- 5.11 The Site does not support suitable habitat for other protected species although it is possible bats may forage around the local area and hedgehogs are reported locally. The relative isolation of the Site for suitable habitats makes the presence of other species less likely. The scrub on Site did not support potential roost features for bats.
- 5.12 Generally, the Site's small size of around 0.25 hectares and its isolation from other semi-natural habitats in the area very much limit any potential value of the Site for protected species.

6 DISCUSSION AND IMPACT ASSESSMENT

- 6.1 The Site is a small unmanaged plot surrounded by roads and other developments. It supports a number of broad-leaved species but nothing with of specific interest and is succumbing to scrub encroachment and colonisation.
- 6.2 An initial walk over of the Site had shown it to have habitats suitable for reptiles to be present, however, a survey undertaken to assess its value for reptiles found no evidence of them.
- 6.3 No on-Site habitats are considered to represent Section 7 Habitats of Principal Importance (Environment Act 2016). Southern marsh orchid and common knapweed are two of our most widespread and recognisable plants but are frequently found in disturbed or unmanaged environments.
- 6.4 The scrub on Site and the shrubberies have potential to support breeding birds, but neither have potential to support roosting bats.
- 6.5 Addressing the future of the Site in its current condition, it is likely that there will be a slow encroachment by woody scrub and an associated loss of ground flora species. There is no incentive for the owner to manage the Site given its small size so it is considered that in the medium to longer term its value will decrease and alter. A mature woodland in this location is also not likely to find support amongst local residents given the small size and proximity to the main road and housing. The habit of mature goat willow to collapse could offer potential negative issues to local public safety.
- 6.6 Under the Environment (Wales) Act 2016 and Well Being of Future Generations Act 2015 require Local Planning Authorities (LPA's) and other public bodies must seek to maintain and enhance biodiversity so far as consistent with the proper exercise of their functions and in so doing promote the resilience of ecosystems. Assessment of the Ecosystem Resilience is therefore an integral part of the LPA's duty and they will need to consider the impacts of the proposed development upon the resilience of the adjacent wooded areas in this context. LPAs are directed to consider the resilience of ecosystems early in the planning process to aid assessment of the impacts of any proposed development upon biodiversity. In addition, a letter from the Chief Planning Officer clarified planning requirements in relation to biodiversity impacts (see Section 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*'.

Ecosystem resilience

- 6.7 The premise for Ecosystem Resilience is laid out in Section 4 of The State of Natural Resources Report, a 2018 document produced by Natural Resources Wales (NRW) on behalf of the Welsh Government. It lays out a framework for assessing ecosystem resilience. However, despite the duty placed on LPA's, there is no currently agreed format for this assessment.
- 6.8 Section 4 names five attributes that NRW consider 'building blocks' of ecosystem resilience, these are:
- Diversity
 - Extent
 - Condition
 - Connectivity
 - Adaptability
- 6.9 These factors are considered below, although none of them are considered 'standalone' and all interrelate to some extent. It is also important to note that it is the responsibility of the LPA to assess Ecosystem Resilience and that any Site based report is not able to make judgements on a wider scale. It should also be acknowledged that there is as yet no agreed format to undertake such an assessment.

Diversity

- 6.10 The habitats on Site can be placed into two broadly distinct areas, poor semi-improved grassland and goat willow semi-mature scrub woodland. The Site itself contributes little to ecosystem diversity due to its relatively isolated position from other local semi-natural habitats.
- 6.11 It is considered overall that habitat diversity on Site and in the proposed construction zone itself is of low value. There will be no retained habitats on Site given the small size of it, however the houses will support gardens which will offer some open space and floristic variety.
- 6.12 The Site falls near to two Sites of Importance for Nature Conservation (SINC) Sites designated by Neath Port Talbot and also within the generic "waterways" SINC. This is confusing as there are no apparent watercourses on the Site. The small scale of the development is unlikely to have any negative impacts upon the nearby SINC sites which do not share similar habitats.

Extent

- 6.13 The whole Site is approximately 0.25Ha, its relatively small size has limited habitat diversity and its ability to support protected species.

Condition

- 6.14 The Site is in poor condition having been subject to disturbance and unmanaged with developing scrub encroachment; it is not considered to be in good condition for biodiversity or likely to see any change that would enhance it in its current form.

Connectivity

- 6.15 The Site itself has poor connectivity to adjacent habitats as it is isolated within the built environment. It is possible that pipistrelle bats would forage over it, but other than breeding birds, the Site is unlikely to support any other protected species.

Adaptability

- 6.16 NRW comments that:
‘Adaptability differs from the other attributes because it is part of the definition of resilience rather than an attribute that supports it. However, its inclusion in the Environment (Wales) Act is important because it emphasises one of the most important features of resilience: dynamism and the ability to adapt to change.’
- 6.17 NRW also comments that *‘Adaptability cannot yet be quantified in an equivalent way to the other attributes and so we have not used it in the assessment of resilience in this State of Natural Resources Review’*. As such this cannot be considered in this report.

General

- 6.18 At its most simple, this would mean that the LPA must protect any biodiversity value of the of the Site, however in this instance it is considered that the Site is of **no significance** in a local or wider context. Under the Environment (Wales) Act 2016 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. LPA’s 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.

Predicted Development Impacts

- 6.19 It is considered that there will be **no significant development impacts** arising from the development of this Site.

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

- 7.5 All UK bat species are protected under the Wildlife and Countryside Act 1981. Schedule 5 of this act makes it illegal to intentionally kill, injure or take these animals. It is also an offence to intentionally damage or destroy their place of rest. In 2007 the offences of killing, injuring or taking species under Section 9(1), 9(2) and 9(4)a of European Protected Species listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) were removed to avoid duplication with their protection under Annex IV of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora (The Habitats Directive) as amended. The regulations remove the defence of inadvertent or accidental damage to roosts and make the offence ‘absolute’.
- 7.6 They are also protected under the Conservation of Habitats and Species Regulations (2017) as amended which requires the United Kingdom government to provide European Protected Species with strict protection. 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,
 - (c) deliberately takes or destroys the eggs of such an animal, or
 - (d) damages or destroys a breeding site or resting place of such an animal,
- is committing an offence.
- 7.7 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.
- 7.8 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.
- 7.9 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.

- 7.10 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.
- 7.11 Eight species of bat are listed under section 7 of the Environment Wales Act (2106). Section 7 of the Act provides a list of living organisms of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. This is a list of species considered at threat within Wales and in need of conservation management to maintain and enhance population numbers.
- 7.12 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

- 7.13 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)).
- 7.14 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.

Hedgehogs

- 7.15 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

- 8.1 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, in addition nest searches are often unsuccessful and miss nesting birds. Development timing is a key consideration should such works prove necessary. Checks should also be made prior to works undertaken outside the breeding season if the weather is fine as climate warming is leading to an extended breeding season.
- 8.2 Lighting will be located with consideration for nocturnal species and will avoid adjacent gardens. 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.
- 8.3 Integral bat and bird boxes will be used in the new construction. Bat tubes will be located on buildings near the western and southern Site boundaries and bird boxes, in particular swift and house sparrow boxes on a number of houses throughout the development. Typical examples are

shown in Figure 2. 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.

- 8.4 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.
- 8.5 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).
- 8.6 If landscaping is proposed, plants of value to local biodiversity, i.e. supporting invertebrates should be used. Native species of local provenance should be used wherever possible.

9 CONCLUSIONS

- 9.1 The Site is small and unmanaged supporting species poor grassland and goat willow scrub.
- 9.2 A presence-absence survey found no evidence of reptiles using the Site.
- 9.3 There are no apparent ecological considerations that would prevent the development going ahead.

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**FIGURE 1:
PHASE 1 HABITAT MAP**

Figure 1: Phase 1 Habitat Survey map Ecology – September 2022



FIGURE 2
TYPICAL INTEGRAL BAT AND BIRD BOXES



A

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



B

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



C

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

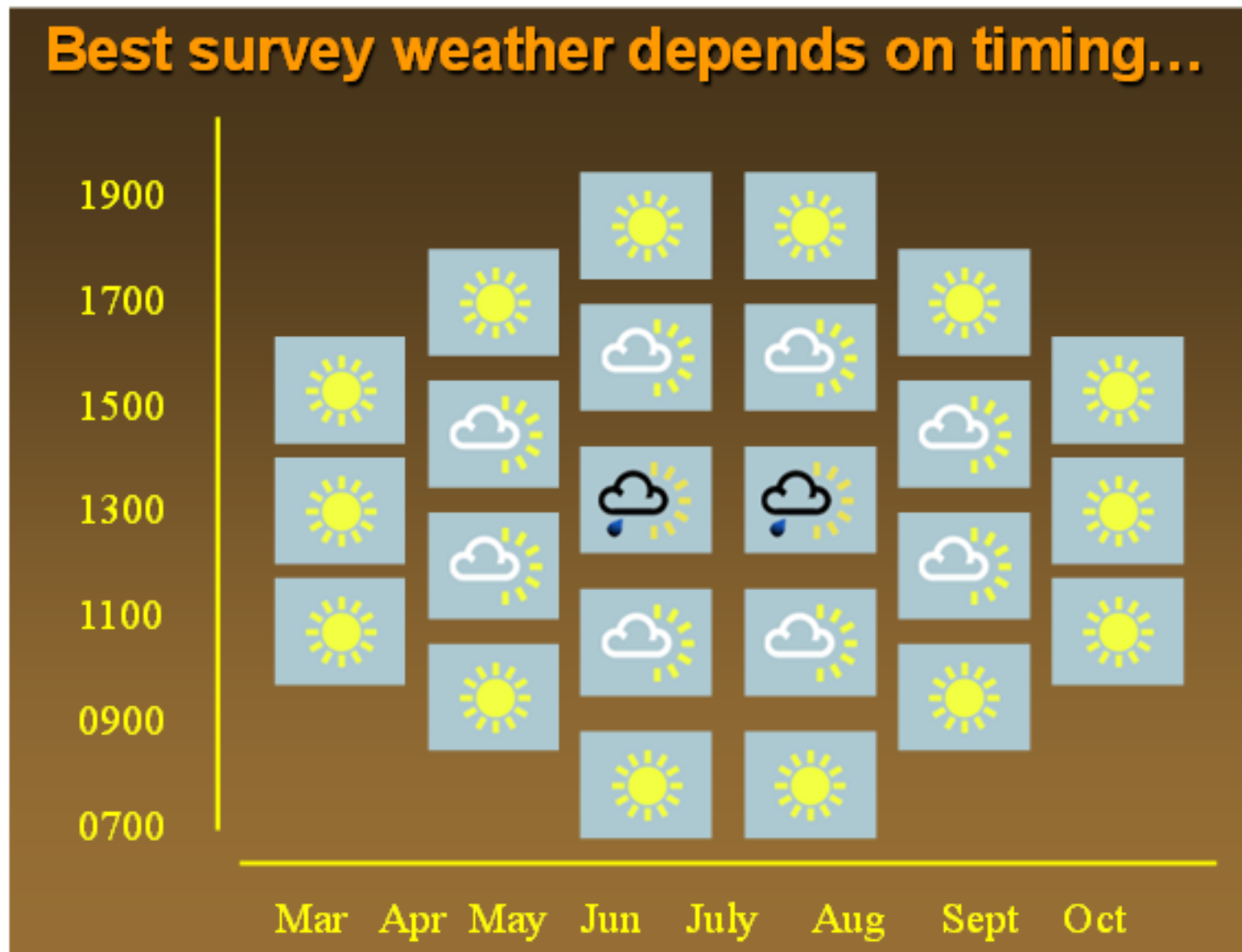


Typical House Sparrow box to be fitted under eaves



Manthorpe swift box

APPENDIX 1
GUIDE TO SUITABLE REPTILE SURVEY WEATHER CONDITIONS



APPENDIX 2

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 3
PHASE 1 HABITAT SURVEY TARGET NOTES

1. Ornamental shrubbery adjacent to car park to east and along access road to north. Unmanaged with colonisation by abundantly occurring bramble, locally frequent giant horsetail and soft rush and rarely occurring southern marsh orchid. Ash and silver birch are also present. Shrub species noted were cotoneaster sp, 'red osier' dogwood, cutleaf evergreen blackberry, raspberry and Siberian dogwood.
2. Unmanaged rank grassland with scrub encroachment and large areas of sedge. The site has been disturbed and a drain runs through it. Although supporting many species typical of wetter areas, it is best described as species poor grassland, many species are garden escapes (i.e. variegated reed canary grass), or typical of disturbed and neutral grassland. Species recorded were:

<i>Species</i>	<i>Frequency</i>
Bramble	LF
Cock's-foot	F
Common dock	O
Common knapweed	F
Common vetch	O
Compact rush	LF
Creeping bent	LF
Creeping buttercup	LF
Creeping jenny	O
Curled dock	O
False fox sedge	LA
False oat grass	F
Goat willow (scrub)	O
Hawthorn (scrub)	O
Hogweed	O
Lady's smock	O
Meadow buttercup	LF
Meadow vetchling	O/LF
Meadowsweet	LF
Oval sedge	O
Raspberry	LF
Red clover	O/LF
Reed canary grass (cultivar)	LF
Ribwort plantain	LF
Silverweed	F
Smooth meadow grass	LF
Southern marsh orchid	R
Sweet vernal grass	A

Water figwort	O
Yorkshire fog	LA

2. Goat willow scrub. Developing in one part of the Site, young goat willow is dominant over around 15% of the Site adjacent to the Dulais Road boundary. Canopy cover is dense but in open areas there is frequently occurring meadowsweet and soft rush with other broad leaved herb and grasses. Species recorded are shown below:

<i>Species</i>	<i>Frequency</i>
Bird's-foot trefoil	LF
Compact rush	O
Creeping cinquefoil	O
Goat willow	A
Greater bird's-foot trefoil	LF
Herb robert	R
Marsh thistle	LF
Meadowsweet	F
Soft rush	F
Spear thistle	O
Wild angelica	O
Yorkshire fog	F

APPENDIX 4
LIST OF PLANT SPECIES RECORDED IN THE SURVEY

<i>Species</i>	<i>Scientific Name</i>
Ash	<i>Fraxinus excelsior</i>
Bird's-foot trefoil	<i>Lotus corniculatus</i>
Bramble	<i>Rubus fruticosus</i> agg
Cock's-foot	<i>Dactylis glomerata</i>
Common dock	<i>Rumex obtusifolius</i>
Common knapweed	<i>Centaurea nigra</i>
Common vetch	<i>Vicia cracca</i>
Compact rush	<i>Juncus conglomeratus</i>
Cotoneaster sp	<i>Cotoneaster</i> sp
Creeping bent	<i>Agrostis stolonifera</i>
Creeping buttercup	<i>Ranunculus repens</i>
Creeping cinquefoil	<i>Potentilla reptans</i>
Creeping jenny	<i>Lysimachia nummularia</i>
Curled dock	<i>Rumex crispus</i>
Cutleaf evergreen blackberry	<i>Rubus laciniatus</i>
False fox sedge	<i>Carex otrubea</i>
False oat grass	<i>Arrhenatherum elatius</i>
Giant horsetail	<i>Equisetum telmateia</i>
Goat willow	<i>Salix caprea</i>
Greater bird's-foot trefoil	<i>Lotus pedunculatus</i>
Hawthorn	<i>Crataegus monogyna</i>
Herb robert	<i>Geranium robertianum</i>
Hogweed	<i>Heracleum sphondylium</i>
Lady's smock	<i>Cardamine pratensis</i>
Marsh thistle	<i>Cirsium palustre</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Oval sedge	<i>Carex ovalis</i>
Raspberry	<i>Rubus idaeus</i>
Red clover	<i>Trifolium pratense</i>
Red osier dogwood	<i>Cornus sericea</i>
Reed canary grass (cultivar)	<i>Phalaris arundinacea</i> sp
Ribwort plantain	<i>Plantago lanceolata</i>
Siberian dogwood	<i>Cornus alba</i>
Silver birch	<i>Betula pendula</i>
Silverweed	<i>Potentilla anserina</i>
Smooth meadow grass	<i>Poa pratensis</i>
Soft rush	<i>Juncus effusus</i>
Southern marsh orchid	<i>Dactylorhiza praetermissa</i>

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Hawkeswood Ecology – September 2022

Spear thistle	<i>Cirsium vulgare</i>
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
Water figwort	<i>Scrophularia umbrosa</i>
Wild angelica	<i>Angelica sylvestris</i>
Yorkshire fog	<i>Hocus lanatus</i>

APPENDIX 5
PHOTOGRAPHS

Preliminary Ecological Appraisal and Reptile Survey, Land at Nant-Y-Cafn, Seven Sisters.

Hawkeswood Ecology – September 2022



Looking from the service road towards the goat willow scrub (TN3).



Looking south across TN1 (left) and TN 2



Developing goat willow scrub



False fox sedge in the wetter area of the Site.



Looking to the eastern boundary, TN1 by car park.



Reptile refugia mat in situ

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