



**Land at Pine Valley,  
Cwmafan, Port Talbot**

**Preliminary Ecological Appraisal**

**August 2018**

# Acer Ecology

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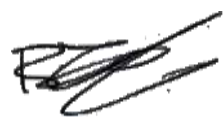

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## Document Verification Table

Land at Pine Valley, Cwmafan Preliminary Ecological Appraisal				
Revision	Date	Prepared by	Checked by	Verified by
1.0	16 August 2018	Alastair Krzyzosiak Ecologist 	Rory Jones MCIEEM Senior Ecologist 	Paul Hudson MCIEEM Principal Ecologist 

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## Summary

<b>Site Location</b>	Acer Ecology Ltd was instructed by C2J Architects to conduct a preliminary ecological appraisal of land at Pine Valley, Cwmafan, Port Talbot, SA12 9NF.
<b>Development Proposals</b>	The proposed development works are likely to comprise clearance of the site to facilitate the development of residential housing on the site.
<b>Statutory and Non-Statutory Nature Designations</b>	There are no statutory or non-statutory designated sites within the proposed development site. However, a parcel of ancient woodland (also a SINC) is located immediately adjacent to the site along the southern site boundary. Additional SINCs have been identified in the wider area around the site.
<b>Impacts on Habitats of Value</b>	No habitats on site are likely to be greater than site value. Whilst the loss of the on-site habitats would be unlikely to have a significant impact outside of the context of the site, it would nevertheless be desirable that the impacts be either minimised or appropriately mitigated where possible.
<b>Impacts on Protected and Notable Species</b>	The proposed development could potentially have adverse impacts of varying degrees on a range of legally protected species, including common reptiles, nesting birds and foraging bats.
<b>Invasive Non-native Species</b>	Several small patches of Japanese knotweed were recorded scattered throughout the site.
<b>Licensing Requirements</b>	None required.
<b>Requirements for Additional Survey</b>	The following additional surveys are required: <ul style="list-style-type: none"> <li>• Bat transect surveys: The habitats on the site are assessed as having 'moderate suitability for bats'. Due to the relatively small size of the site, it should be subject to a transect survey, undertaken once a month from August to October inclusive. This approach should be agreed with the county planning ecologist; and</li> <li>• Reptile survey; and</li> <li>• Invertebrate survey.</li> </ul>
<b>Recommendations</b>	The following provisional recommendations have been developed based on the development proposals available at the time of writing: <ul style="list-style-type: none"> <li>• Further surveys for bats and reptiles (as stated above);</li> <li>• Avoidance measures; and</li> <li>• Precautionary measures.</li> </ul> <p>Full details of compensatory and enhancement measures will only be available after completion of the further surveys outlined in Section 5.</p> <p>It should be noted that the recommendations detailed in this report may be subject to change upon receipt of the final design and on completion of the further surveys.</p>

## **1. Introduction**

### **1.1. Brief**

Acer Ecology Ltd was instructed by C2J Architects to conduct a preliminary ecological appraisal of land at Pine Valley, Cwmafan, Port Talbot, SA12 9NF, within the boundary of Neath Port Talbot County Borough Council (Ordnance Survey Grid Reference centred at SS 77529 92088). The purpose of the assessment was to document the baseline ecological condition of the survey area, which comprises the red line boundary shown in Plan 1. This included identification of any designated sites or habitats that could be affected by the proposed works, and identification of potential for protected and/or otherwise notable species of conservation interest that could be affected. Potential ecological constraints were identified, and subsequent recommendations developed.

This assessment will provide initial recommendations based on the development proposals available at the time of writing. They should be revised upon any changes made to the final design.

### **1.2. Site Description**

The site proposed for development measures approximately 6900m<sup>2</sup> and mainly comprises a mosaic of scrub habitats, tall ruderal vegetation and neutral grassland.

The site is situated within a residential housing estate, with residential dwellings and gardens on all sides of the site. The garden adjacent to the southern site boundary contains remnants of ancient woodland which are designated as SINCs.

### **1.3. Proposed Works**

The proposed development works are likely to comprise clearance of the site to facilitate the development of residential housing on the site. Detailed proposals are not available at the time of writing.

### **1.4. Scope of the Study**

The study comprised the following:

- A desk study to identify existing information on statutory and non-statutory sites of nature conservation interest, and records of notable or protected habitats or species within the site and its environs;
- A Phase 1 Habitat Survey of the site, extended to search for evidence of, and potential for, protected fauna; and
- Identification of potential ecological constraints to the proposed works at the site and assessments of impacts including appropriate mitigation measures where necessary.

## **1.5. Reporting**

This report aims to:

- Outline the methodology used during the survey;
- Present the results of the survey;
- Provide an ecological evaluation of on-site habitats, including an assessment of the potential for protected species;
- Provide an assessment of the potential impacts of the development proposals on ecological receptors identified through the desk and field study;
- Provide an assessment of the potential ecological constraints to the proposals; and
- Provide recommendations for further survey, avoidance, mitigation and enhancement where appropriate.

## 2. Methods

The survey was undertaken following standard methods as described in the Chartered Institute of Ecology and Environmental Management (CIEEM) Preliminary Ecological Appraisal 2016 guidelines, and the Phase 1 Habitat Survey methodology (Joint Nature Conservation Committee, 2010). The methodology utilised for the survey work comprised a desk study, habitat survey and a survey of protected and notable species.

### 2.1. Desk Study

#### 2.1.1. Protected Sites, Habitats and Species

Information on designated sites and protected species was obtained from the following sources. The legislation and policy relating to statutory and non-statutory designated sites can be found in Appendix 1.

Table 1: Sources of Data

Source	Data	Radius of Search
Quantum Geographical Information Systems (QGIS) Layer	Statutory and non-statutory nature conservation designated sites  Ancient Semi-Natural Woodland (ASNW)	RAMSAR/Special Areas of Conservation (SACs)/ Special Protection Areas (SPAs)/Sites of Special Scientific Interest (SSSIs)/National Nature Reserves (NNRs)/Local Nature Reserves (LNRs) – 2km <sup>1</sup> . SACs (designated for bats) - 10km. ASNW - 2km.
South East Wales Biological Records Centre (SEWBRc)	Protected species records  Sites of Importance for Nature Conservation (SINCs)	1km (records for certain mobile species were received for up to 2km).  1km.

All available records of bat roosts were considered. For other species, only records collected within the last 10 years were considered relevant.

#### 2.1.2. Landscape Context

The site and wider landscape was assessed and characterised using aerial images, Ordnance Survey maps and QGIS. The presence of off-site features and habitats, which add to the ecological value within the wider area (for example, ponds within 500m of the site) were identified. Where appropriate, such features were scoped into the detailed assessment of impacts presented in Section 4 below.

<sup>1</sup> The citations of all the SSSIs and SACs within 2km of the site were consulted to determine if any of them had features or species which could be affected by the development proposals.

## 2.2. Field Study

### 2.2.1. Personnel

The field survey was undertaken in variable weather on the 7<sup>th</sup> August 2018 by Alastair Krzyzosiak<sup>2</sup>.

### 2.2.2. Vegetation and Habitats

The vegetation and habitat types present within the survey area were categorised and mapped in accordance with the standard<sup>3</sup> Phase 1 Habitat assessment methodology (Joint Nature Conservation Committee, 2010), dominant and conspicuous plant species were recorded for each habitat. Target notes were used to record information on features of ecological interest, such as evidence of, or habitats with potential to support protected species. Following the completion of the survey, a colour-coded habitat plan was digitised using QGIS to show the extent and distribution of the different habitat types present within the site (see **Error! Reference source not found.**<sup>2</sup>). Target notes (TN) are also shown on Plan 2.

Hedgerows within the site were not formally assessed against the definitions within the Hedgerow Regulations 1997 as this was beyond the scope of the assessment.

The presence of invasive plant species listed on Schedule 9<sup>4</sup> of the Wildlife and Countryside Act 1981 (as amended), such as Himalayan balsam (*Impatiens glandulifera*), giant hogweed (*Heracleum mantegazzianum*) and Japanese knotweed (*Fallopia japonica*) were also noted during the survey, if present.

### 2.2.3. Protected and Notable Species

During the survey, emphasis was placed on searching for evidence of, and habitats with, potential to support protected or notable species, especially species meeting any of the following criteria:

- Listed under the Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended);
- Listed under Section 7 of the Environment (Wales) Act 2016 as being of principal importance for maintaining and enhancing biodiversity in Wales;
- Listed as a local priority for conservation, for example in the relevant local Biodiversity Action Plan (BAP);
- Red Listed using International Union for the Conservation of Nature (IUCN) criteria (e.g. in one of the UK Species Status Project<sup>5</sup> reviews, in the Species of Conservation Concern Red

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<sup>2</sup> Alastair is employed by Acer Ecology and is experienced in undertaking preliminary ecological appraisals. He graduated with an MSc in Ecological Consultancy from Newcastle University and has 3 years of postgraduate experience. He has undertaken extensive training in protected species assessment and phase 1 habitat surveys. He holds Welsh and English licences for bats and great crested newts.

<sup>3</sup> Some additional categories were also used if applicable e.g. hard standing and Japanese knotweed.

<sup>4</sup> Schedule 9 species of plants and animals are ones that do not naturally occur in Great Britain but have become established in the wild and represent a threat to the natural fauna and flora.

<sup>5</sup> The Species Status project is the successor to the JNCC's Species Status Assessment project, providing up-to-date assessments of the threat status of various taxa using the internationally accepted Red List guidelines (<http://jncc.defra.gov.uk/page-1773>)



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List<sup>6</sup>, Birds of Conservation Concern in Wales<sup>7</sup>, or, where a more recent assessment of the taxonomic group has not yet been undertaken, listed in a Red Data Book);

- Listed as Near Threatened or Amber Listed e.g. in one of the UK Species Status Project reviews, in Birds of Conservation Concern in Wales or in the Species of Conservation Concern Amber List;
- Listed as a Nationally Rare or Nationally Scarce species (e.g. in one of the Species Status Project reviews) or listed as a Nationally Notable species where a more recent assessment of the taxonomic group has not yet been undertaken; and/or
- Endemic to a country or geographic location (it is appropriate to recognise endemic sub-species, phenotypes, or cultural behaviours of a population that are unique to a particular place).

It should be noted that only those species with potential to be present on site are mentioned within this report. The methodologies used were as follows:

## ***Birds***

Any birds observed during the field survey were recorded, in addition to features capable of supporting nesting birds (e.g. trees, hedgerows, buildings, bramble, ruderal vegetation and rough grassland etc.). The site was also assessed for its actual and potential suitability to support Wildlife and Countryside Act 1981 (as amended) Schedule 1 species.

A comprehensive bird survey, such as a breeding bird survey, was not undertaken as this was beyond the scope of the assessment.

## ***Bats***

### Preliminary Ground-level Roost Assessment

A preliminary ground-level roost assessment of the trees within the survey area was undertaken looking for features that bats could use for roosting (Potential Roost Features<sup>8</sup> (PRF) and evidence of bats (i.e. droppings in, around or below a PRF; odour emanating from a PRF; audible squeaking at dusk or during warm weather; or staining below the PRF). A systematic inspection was carried out around all accessible aspects of the tree, from both close to the trunk and further away. The location of the trees are shown on 2.

The trees were assessed for their suitability to support roosting and hibernating bats in accordance with Table 4.1 of the Bat Conservation Trusts Bat Surveys for Professional Ecologists: Good Practice Guidelines

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<sup>6</sup> Eaton et al. (2015) Birds of conservation concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. British Birds 108: 708-746.

<sup>7</sup> Johnstone, I. and Bladwell, S. (2016) Birds of Conservation Concern in Wales 3: the population status of birds in Wales. Birds in Wales 13 (1).

<sup>8</sup> Potential Roost Features that bats may use identified by Andrews include: woodpecker holes; rot holes; hazard beams; other vertical or horizontal cracks and splits in stems or branches; partially detached flaking bark; knot holes; man-made holes; cankers; other hollows or cavities; junctions with included bark and potential cavities; gaps between overlapping stems or branches; partially detached ivy with stem diameters more than 50mm; and bat, bird or dormouse boxes.

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(Collins, 2016). A high-powered torch (Clulite), an endoscope (Snake vision) binoculars and a ladder were used as appropriate during the survey.

There are no buildings present within the survey area therefore a building assessment was not carried out.

## Terrestrial Habitat Assessment

A preliminary assessment of the value of the site for bats (and any potential roost sites therein) was made in accordance with Table 4.1 of the Bat Surveys for Professional Ecologists (Collins, 2016). The assessment was based on the relative abundance and quality of habitat features within the site, and surrounding landscape, suitable for roosting, foraging and commuting bats.

### **Great Crested Newts**

The survey area was appraised for its suitability to support great crested newts (*Triturus cristatus*). The assessment was based on guidance outlined in the Herpetofauna Workers' Manual (Joint Nature Conservation Committee, 2003) and the Great Crested Newt Conservation Handbook (Langton, Beckett & Foster, 2001).

Ordnance Survey maps and aerial images of the land surrounding the site were consulted to determine if any water bodies were present within the site or 500m of it. No suitable water bodies were identified within the study area.

### **Badgers**

Earth embankments, wooded copses, hedgerows, dense bramble beds are habitat features that often contain evidence of badger (*Meles meles*). Where present on site these and other suitable habitat features were searched for such evidence. Where present, the location of badger signs such as setts, runs, dung pits or latrines, prints, hair and foraging snuffle holes were recorded.

### **Reptiles**

An assessment of the suitability of on-site habitats to support reptiles was made. Reptiles require a diverse range of habitats to meet their needs such as hedgerows, scrub, rough grassland, wood piles, rubble, banks and compost heaps. The potential of the site to provide hibernation opportunities and spring/summer/autumn habitat was also assessed, with reference to guidance provided in the Herpetofauna Workers' Manual (Joint Nature Conservation Committee, 2003), the Reptile Management Handbook (Edgar, Foster & Baker, 2011) and the Reptile Mitigation Guidelines Technical Note TIN 102 (Natural England, 2013). The following factors were considered: vegetation type and structure; insolation (sun exposure); slope aspect; topography; surface geology; habitat connectivity; habitat size; prey abundance; refuge opportunity; hibernation opportunity; egg-laying potential for grass snake (*Natrix natrix*); public pressure; percentage of shade; levels of disturbance and management regime.

A targeted presence/likely absence reptile survey was not undertaken as it was beyond the scope of this assessment.

## ***Other Species***

General habitat suitability and incidental sightings of other animal species were also noted.

### **2.2.4. Assessment of Ecological Value**

The value of the habitats and features of the site have been provisionally evaluated and graded in accordance with a geographical frame of reference as detailed in Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland (CIEEM, 2016). The level of value of specific ecological receptors is assigned using a geographic frame of reference, i.e. international value being most important, then national, regional, county, district, local and lastly, within the immediate zone of influence of the site only. Brief descriptions of how Acer Ecology interprets these categories are set out in Appendix 3.

### **2.2.5. Constraints and Limitations**

#### General Temporal Constraints

Any ecological survey can only identify what was present on site at the time the survey was conducted and habitat usage by species can change over time.

#### Incomplete Survey Information

Full surveys for the protected species listed previously have not yet been carried out. For some species of fauna for which evidence has been found or which are considered likely to occur on site, further targeted survey is advisable at a more appropriate time of year (see Section 5 below).

## 3. Results

### 3.1. Desk Study

#### 3.1.1. Statutory Nature Conservation Designated Sites

##### Statutory Sites (SACs or SSSIs) Designated for Bats within 10km of Site

No SACs or SSSIs specially designated for bats lie within 10km of the site.

##### SACS and SSSIs within 2km of Site

There are no SACs or SSSIs within 2km of the proposed development site.

##### NNRs and LNRs

No NNRs or LNRs are present within 2km of the site.

#### 3.1.2. Non-statutory Nature Conservation Designated Sites

##### Site of Importance for Nature Conservation (SINC)

The following four SINCs lie within 1km of the proposed development site:

- Various patches of ancient Semi Natural Woodland, comprising Native Woodland (Upland Oak Woodland, Lowland Beech & Yew Woodland), the closest of which lies adjacent to the southern site boundary;
- Cwmafan Green Corridor lies approximately 430m to the north-east of the proposed development site, at its nearest point. It comprises scrub and neutral grassland communities;
- Hawthorn Close which lies approximately 550m to the south-east of the proposed development site; and
- Various NPT Watercourses, the closest of which lies approximately 116m to the south-west of the proposed development site.

##### Ancient Woodland

There are 29 areas of Ancient Semi-natural Woodland (ASNW) located within 2km of the proposed development site, the nearest of which immediately borders the southern boundary of the site. These areas have been designated as SINCs.

In addition, seven Planted Areas on Ancient Woodland Sites (PAWS) and one Ancient Woodland Site of Unknown Category are present within the same search radius.

## 3.2. Field Survey

### 3.2.1. Habitats and Vegetation

The results of the general survey of habitats and vegetation are shown on 2. A botanical species list is given in Appendix 2. Photos of each habitat type are shown in Table 2.

## 3.3. Habitat Descriptions

### 3.3.1. Bramble Scrub (A2.1)

Several patches of dense bramble scrub are scattered throughout the site. The two most significant areas lie on elevated ground towards the eastern edge of the site. Smaller patches often occur adjacent to the scattered willow (*Salix* sp.) scrub or in isolation as part of a mosaic of other habitat types.

### 3.3.2. Scattered Scrub (A2.2)

Several patches of willow scrub occur scattered across the site. These are generally restricted to a single, medium sized tree with several smaller saplings. There is a small area of approximately 4m by 4m where several gorse (*Ulex Europaeus*) bushes are beginning to colonise the site (TN3). Numerous individual willow saplings are also beginning to colonise the site as the site is currently unmanaged and appears to have been abandoned for a number of years.

### 3.3.3. Trees (A.3)

Four trees lie along the site boundary. Detailed descriptions are provided in Section 3.4.2. There is a small but distinct understorey underneath T2 and T3, mainly comprising holly (*Ilex aquifolium*), beech (*Fagus sylvatica*) and elm (*Ulmus* sp.) saplings (TN2).

### 3.3.4. Semi-Improved Grassland (B2)

The site can be broadly divided into three areas with slightly different features, all containing semi-improved grasslands. Several areas of fly tipping are situated within these areas (TN1), mainly around the periphery of the site.

The area of grassland mostly along the northern site boundary comprises neutral grassland. Grasses such as cock's foot (*Dactylis glomerata*), couch grass (*Elytrigia repens*), common bent (*Agrostis capillaris*), crested dog's tail (*Cynosurus cristatus*) and sweet vernal grass (*Anthoxanthum odoratum*) are all present and often dominant in some areas. However, there are a good abundance of forbes such as tufted vetch (*Vicia cracca*) and meadow vetchling (*Lathyrus pratensis*). The northern part of the site lies at a higher elevation and is therefore dryer as drainage is better.

The southern part of the site lies further downhill and is therefore less well drained. This part of the site features more abundant mosses, with frequent horsetails (*Equisetum arvense*) and rushes (*Juncus* sp.) in the sward. There are also small patches of bare ground and rubble underfoot.

The third broad area comprises a complex mosaic of semi-improved grassland, as well as a mixture of the other broad habitat types described elsewhere in Section 3.3.

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### 3.3.5. Tall Ruderal Vegetation (C3.1)

Several patches of tall ruderal vegetation are scattered throughout the site. A dense patch of creeping thistle (*Cirsium arvense*) is situated in the easternmost corner of the site and there are several patches of dense rosebay willowherb (*Chamaenerion angustifolium*), greater willowherb (*Epilobium hirsutum*) and nettles (*Urtica dioica*).

### 3.3.6. Fence (J2.3.4)

A timber panel fence forms the site boundary along most of the southern and eastern edges of the land parcel.

### 3.3.7. Wall (J2.3.5)

Two sections of brick and breezeblock walls form the site boundary along part of the eastern and northern edges of the land parcel respectively.





### 3.3.8. Japanese Knotweed

Numerous small areas of japanese knotweed are scattered throughout the site. These generally consist of small or medium sized individual plants rather than dense stands.

Table 2: Phase 1 Habitats

Photo 1: Semi-improved Grassland in Upper Part of Site (Foreground), Bramble Scrub (Background)	Photo 2: Scattered Scrub
 A photograph showing a field of tall, dry grasses in the foreground. In the background, there is a dense thicket of green bramble scrub. A house is partially visible on the left side of the frame.	 A photograph showing a field of tall, dry grasses. Scattered throughout the field are several small, bushy shrubs or trees. A house is visible in the background on the right side.

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Photo 3: Semi-improved Grassland in Lower Part of Site	Photo 4: Tall Ruderal and Piles of Garden Waste, Wall (Foreground)
	
Photo 5: Mosaic of Semi-improved Grassland and Tall Ruderal vegetation	Photo 6: Japanese Knotweed
	

### 3.3.9. Notable Plant Species

#### Data Trawl Results

SEWBRc returned 14 records of bluebell (*Hyacinthoides non-scripta*) from within 1.4km of the development. However, none of the records provided relate to the proposed development site.

#### Field Survey Results

No nationally rare or scarce plant species were recorded on the site.

### 3.4. Protected and Notable Species

#### 3.4.1. Birds

#### Desk Study Results

SEWBRc provided a large number of records for birds within 1km of the site. The following table shows nesting birds (priority and protected) associated with habitats present on site and their conservation status:

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Table 3: Records for Nesting Birds

Species		Schedule 1	Section 7 list – Environment Act Wales	Red list <sup>9</sup>	Amber list <sup>10</sup>
Dunnock	<i>Prunella modularis</i>		Yes		Yes
Firecrest	<i>Regulus ignicapilla</i>	Yes			
House sparrow	<i>Passer domesticus</i>		Yes	Yes	
Linnet	<i>Linaria cannabina</i>		Yes	Yes	
Skylark	<i>Alauda arvensis</i>		Yes	Yes	
Song thrush	<i>Turdus philomelos</i>		Yes	Yes	
Spotted flycatcher	<i>Muscicapa striata</i>		Yes	Yes	
Starling	<i>Sturnus vulgaris</i>		Yes	Yes	
Yellowhammer	<i>Emberiza citrinella</i>		Yes	Yes	

## Field Survey Results

A low number of common birds were recorded on site, including: blackbird (*Turdus merula*), blue tit (*Cyanistes caeruleus*), house sparrow, song thrush, wren (*Troglodytes troglodytes*) and wood pigeon (*Columba palumbus*).

### 3.4.2. Bats

#### Desk Study Results

The data search returned a total of one bat roost record within 2km of the site. The record of the roost did not specify which species of bat or how many were present. In addition to the roost records, SEWBReC returned six records of bats foraging or commuting within 2km of the site. These included five records of common pipistrelle (*Pipistrellus pipistrellus*) and one record of Daubenton's bat (*Myotis daubentonii*).

#### Field Survey Results

The site is considered to provide moderate quality foraging and commuting habitat for bats. There are lines of trees including remnants of ancient woodland and linked residential gardens that form a continuous habitat network adjacent to the site. The site is connected to the wider landscape and there is potential for bats to utilise the site for foraging and commuting to and from their roosts.

The four trees recorded on site have been described in detail in the table overleaf and numbered on **Error! Reference source not found.2**, which should be read in conjunction with this section of the report.

<sup>9</sup> Bird species of high conservation concern, such as those whose population or range is rapidly declining, recently or historically, and those of global conservation concern.

<sup>10</sup> Bird species of medium conservation concern, such as those whose population is in moderate decline, rare breeders, internationally important and localised species and those of unfavourable conservation status in Europe.

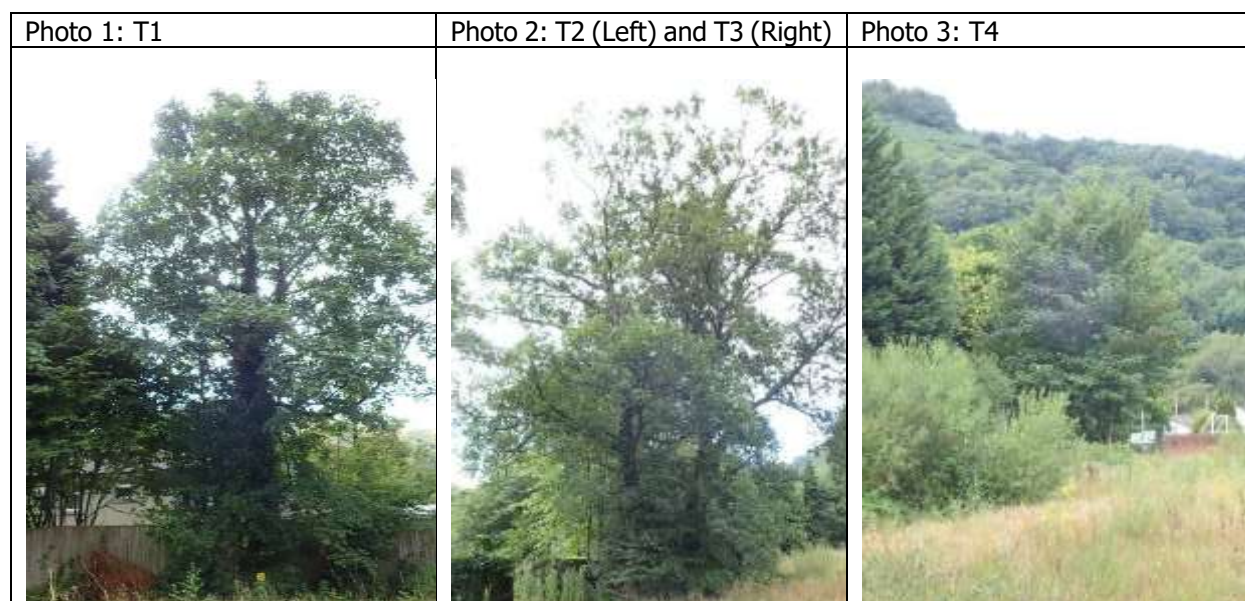


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Table 4: Trees Recorded

No.	Description	Height (m)	DBH <sup>11</sup> (cm)	Potential Roost Features (PRF)	Potential for Roosting Bats
T1	Semi-mature sycamore with ivy <sup>12</sup> covering a large proportion of the trunk, obscuring any potential roost features (if present).	10	40	None visible	Low
T2	Semi-mature oak with ivy covering a large proportion of the trunk, obscuring any potential roost features (if present).	13	70	None visible	Low
T3	Semi-mature oak with ivy covering a large proportion of the trunk, obscuring any potential roost features (if present).	16	85	None visible	Low
T4	Young sycamore with multiple split trunks.	9	(40 – 10)	None	Negligible

Table 5: Photos of Trees



### 3.4.3. Great Crested Newt

#### Desk Study Results

SEWBRc did not return any records of great crested newt from within 1km of the site. Additionally, no recent records of common amphibians were received from within this search radius.

<sup>11</sup> DBH = Diameter at Breast Height.

<sup>12</sup> For ivy to provide an environment suitable for occupation by roosting bats it has to have attained significant age. Typically, the stems should be a minimum of 50 mm diameter (ideally some even larger) and have sections that have formed pockets into which bats slide into or crawl up and under to rest against the bark of the mature tree (G Billington 2011, *pers comm.*, quoted in Andrews 2013). The ivy present on T1, T2 and T3 was not in itself a feature as its stems were narrow, however, the foliage covered a large proportion of the tree, obscuring potential roost features underneath.

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## Field Survey Results

No direct observations of great crested newt were made. However, a targeted survey was not undertaken for this species. No suitable waterbodies were recorded on site or within 500m of it. The site, therefore, does not contain suitable habitat for supporting great crested newt during the aquatic stage of their lifecycle.

During the terrestrial stage of their lifecycle, great crested newt can make use of a range of habitats including scrub and rough grassland for foraging, shelter and hibernation. The terrestrial habitats within the site provide such suitable habitat.

### **3.4.4. Badgers**

#### Desk Study Results

The data search returned two badger (*Meles meles*) records within 2km of the site. One, 500m away recorded in 2004 and the other, 1.2km away, recorded in 2014.

#### Field Survey Results

No evidence of badger was recorded. However, the site does provide suitable foraging opportunities and the vegetation provides cover and protection from disturbance.

### **3.4.5. Reptiles**

#### Desk Study Results

The data search returned 29 records of reptiles within 1km of the site:

- Slow worm (*Anguis fragilis*), 18 records (14 of which occurred within 400m of the proposed development site);
- Common lizard (*Zootoca vivipara*), one record;
- Grass snake (*Natrix natrix*), three records; and
- Adder (*Vipera berus*), six records.

#### Field Survey Results

No reptiles or evidence of reptiles (e.g. sloughed skins<sup>13</sup>) were incidentally recorded during the survey, although a targeted reptile survey was not undertaken. However, the entire site provides good foraging habitat for reptiles such as slow worm and common lizard. Food sources such as invertebrates were abundant during the survey. Piles of brash, garden waste and fly tipped litter are likely to provide suitable refuges and basking spots. Similarly, patches of bare/stony ground are also likely to provide basking opportunities. Furthermore, the site is south facing, increasing sun exposure and basking potential.

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<sup>13</sup> The outer layer of skin is shed, or 'sloughed' in all reptiles. This occurs most frequently in juveniles but adults also go through the process several times a year (Beebee and Griffiths 2000).

## 3.4.6. Other Mammals

### Desk Study Results

SEWBRc returned 11 records of common hedgehog (*Erinaceus europaeus*), the nearest of which was recorded approximately 300m from the site in 2009.

### Field Survey Results

Several hedgehog (*Erinaceus europaeus*) droppings (TN4) were recorded as well as several small mammal paths. The entire site is considered to provide valuable foraging habitat for hedgehog.

It is likely that a range of common small mammals are present on the site, including shrews (*Sorex* sp.), voles, mice (*Apodemus* sp.), fox (*Vulpes vulpes*) and mole (*Talpa europaea*) etc. They are likely to occur either as resident species or whilst foraging and/or commuting.

## 3.4.7. Invertebrates

### Desk Study Results

The data search returned six records of invertebrates of conservation concern. However, all of these records were of a historic nature and do not relate to the proposed development site.






### Field Survey Results

Variable weather conditions during the survey meant that invertebrate activity was very varied throughout the survey. Drier and hotter conditions towards the end of the survey brought out an abundance of invertebrate activity. The site provides excellent opportunities for invertebrates due the wide range of flowering plants. A large number of spiders, bees, flies, grasshoppers and crickets were noted, including (but not limited to) the following species:

- Seven-spot ladybird (*Coccinella septempunctata*);
- Four-spotted orb weaver spider (*Araneus quadratus*);
- Common blue (*Polyommatus icarus*);
- Small copper (*Lycaena phlaeas*); and
- Cinnabar moth caterpillars (*Tyria jacobaeae*).

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Table 6: Invertebrates Recorded

Photo 1: Seven Spot Ladybird	Photo 2: Four-spotted Orb Weaver Spider
 A close-up photograph of a Seven Spot Ladybird (Coccinella septempunctata) on a dark, textured surface. The beetle is bright orange with seven distinct black spots on its elytra.	 A close-up photograph of a Four-spotted Orb Weaver Spider (Araneus quadripunctatus) on a light-colored surface. The spider has a greenish-brown body with four dark spots and reddish-brown legs.
Photo 3: Common Blue	Photo 4: Small Copper
 A photograph of a Common Blue butterfly (Glaucopsyche cyzicus) with vibrant blue wings and a white border, perched on a yellow flower.	 A photograph of a Small Copper butterfly (Glaucopsyche cyzicus) with orange and blue wings, perched on a yellow flower.
Photo 5: Cinnabar Moth Caterpillars	
 A photograph showing two Cinnabar Moth caterpillars (Cinnabara cinnabara) with their characteristic black and yellow striped pattern, crawling on green leaves.	

## 4. Ecological Evaluation, Legislation and Impact Assessment

The ecological value of the *in-situ* habitats and the potential/actual presence of protected species are discussed in this section, along with a summary of relevant legislation and planning policies relating to habitats and species. Potential impacts on protected sites, *in-situ* habitats and protected or notable species arising from the proposed development, are identified including both direct and indirect impacts, and those associated with construction and operational stages.

### 4.1. Statutory and Non-Statutory Designated Sites

#### Assessment of Ecological Value of SINC's and Ancient Woodland

SINC's are considered to have substantive nature conservation value at the regional or district level. They are designated at the county or county borough level by the local planning authority and are recognised as a planning constraint in the relevant statutory development plan.

The UK is a sparsely wooded country: 11.5% of Great Britain is covered with trees. Only 1.2% of the UK is ancient semi-natural woodland, a valuable and irreplaceable natural resource. Ancient semi-natural woodland, and plantations on ancient woodland sites, are a priority for conservation (JNCC). The nearby ancient woodland sites have also been designated as SINC's.

Legislation and policy relating to protected sites is summarised in Appendix 1.

#### Assessment of Potential Development Impacts

The watercourses around the settlement in which the proposed development site is located have been designated as SINC's, as have the designated ancient woodlands. The closest watercourse to the site lies approximately 140m to the south-west and the closest area of ancient woodland lies adjacent to the site to the south.

While the area of land immediately to the south of the proposed development site is nominally classified as ancient woodland, the area consists of residential gardens, non-native coniferous trees and lacks any areas of dense woodland in close proximity to the site. The extent of any negative impacts to ancient woodland is therefore considered to be negligible as a result of the proposed development.

The NPT watercourses (116m), Cwmafan Green Corridor (430m) and Hawthorn Close (550m) SINC lie a sufficient distance from the proposed development site and are buffered by the surrounding residential housing estate so that no direct impacts on any designated sites are predicted as a result of the proposed development. Indirect impacts of a residential development of the site may include increased footfall on local SINC's, however, given the already residential nature of the area, development of the proposed site is considered unlikely to have a significant impact in this regard.

## **4.2. Assessment of Ecological Value of On-site Section 7, LBAP and SINC Habitats**

No habitats within the site boundary are listed in Section 7 as a 'habitats of principal importance for conservation of biological diversity in Wales' (Environment Wales Act 2016; Wales Biodiversity Partnership, 2016).

## **4.3. Assessment of Ecological Value of On-site Habitats Which Do Not Qualify as Section 7, LBAP and SINC Habitat**

### Assessment of Ecological Value

The proposed development site generally consists of a mosaic of relatively widespread habitats such as scattered scrub, tall ruderal vegetation, dense bramble beds and semi-improved grassland. The site contains a wide range of flowering plants which are valuable to invertebrates, which were recorded in good numbers during the field survey. However, the site as a whole has been evaluated as being of site value for ecology. It has value for common fauna such as foraging birds, bats, small mammals and invertebrates, but the site is considered unlikely to be of wider conservation significance.

### Assessment of Potential Development Impacts

Development of the site to facilitate the construction of housing would likely result in the loss of the majority (if not all) of the habitats on the site. This is considered to be of a large magnitude at site level but of low regional significance given the widespread nature of the habitats on-site. Nonetheless, recommendations for mitigation and enhancement are included in Section 5 in order to partially off-set losses of biodiversity on the site as a result of a residential development.

## **4.4. Assessment of Impacts of Invasive Species**

### Presence of Japanese Knotweed on-site

Small amounts of Japanese knotweed are present across the site. It is possible that it was able to colonise the site from plants in the surrounding landscape or via fly tipping or garden waste dumped on the site. The surrounding habitats of the site comprise residential gardens and it is possible that left unchecked, Japanese knotweed may spread into neighbouring properties.

### Legislation

Japanese knotweed is listed under Schedule 9 of the Wildlife and Countryside Act (1981), as amended. This act specifically prohibits the reckless or deliberate spreading of this species.

### Assessment of Potential Development Impacts

Any site works have significant potential to inadvertently cause the spread of Japanese knotweed from the site or spread it further within the site. The proposed development could potentially result in the spread of Japanese knotweed through the accidental distribution of soils containing root fragments or rhizomes

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during earthworks and haulage etc. Japanese knotweed is a Schedule 9 invasive plant and therefore appropriate measures are required to minimise the risk of its spread during the works, and to achieve its eradication. Detailed recommendations are provided in Section 5.

## **4.5. Protected and Notable Species**

### **4.5.1. Birds**

#### Assessment of Ecological Value of Site for Birds

Areas of rough grassland, scrub interfaces and dense scrub/brambles provide nesting potential for scrub and ground-nesting birds such as skylark (UKBAP; Red list), dunnock, house sparrow, song thrush and linnet – all of which have been recorded in proximity to the site. There is also potential for other birds such as Yellowhammer (a red list bird species<sup>14</sup> on account of a severe breeding population decline over 25 years (i.e. 49% decline) and in the longer term (i.e. 54% decline)). This species typically breeds within hedgerows and wide uncultivated grassy margins around fields and could potentially breed within the site.

The whole site provides nesting and foraging opportunities for a range of common scrub and ground nesting birds. As a whole, the site is considered to be of local value to birds. It contains individual features that provide moderate foraging and nesting habitats for a range of species, but all these features are widespread and common in the surrounding landscape.

#### Legislation

All wild British birds (while nesting, building nests and sitting on eggs), their nests and eggs (with certain limited exceptions) are protected by law under Section 1 of the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000. Included in this protection are all nests (at whatever stage of construction or use) and all dependent young until the nest is abandoned and the young have fledged and become independent. Particularly rare species such as barn owl (*Tyto alba*) are listed on Schedule 1 which gives them additional protection from disturbance whilst nest building, whilst near a nest with eggs or young, or from disturbing the dependant young.

#### Impact Assessment of Proposed Development on Birds

It is likely that a residential housing development on the site would result in the loss of most of the suitable bird nesting habitat from the site. This is considered to be of a large magnitude at site level but of low regional significance given the widespread nature of the habitats on-site. Recommendations are set out in Section 5 in order to reduce the impacts to nesting birds within the site.

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<sup>14</sup> Bird species of high conservation, such as those that are globally threatened; have a historical population decline in UK during 1800–1995; severe (at least 50%) decline in UK breeding population over last 25 years, or longer-term period (the entire period used for assessments since the first BoCC review, starting in 1969) or severe (at least 50%) contraction of UK breeding range over last 25 years, or the longer-term period.

## 4.5.2. Bats

### Assessment of Ecological Value of Site for Bats

Trees 1, 2 and 3 have been assessed as having low potential to support roosting bats due to the presence of ivy which made a full assessment of the trees difficult as potential roost features may have been obscured from view. It is therefore possible (but considered unlikely), that bats may utilise these trees to roost.

The bat habitat quality of the site was assessed against tables 4.2 of the Bat Survey Guidance (Collins, 2016, Table 4.1) which would suggest that the site is of moderate habitat quality for bats. The site overall contains habitat which has potential for bats commuting and foraging and is relatively well linked to the wider landscape to the south-west where bats are more likely to forage in areas of more significant vegetation. The site supports a healthy invertebrate population which in turn is likely to provide ample foraging opportunities for bats and increase the sites suitability. Furthermore, the absence of artificial light from the site means that the area is likely to be dark at night, increasing its suitability for foraging bats. However, the site is somewhat restricted in its connectivity to the wider landscape by the surrounding residential housing estate.

### Legislation

All species of bats and their roosting sites are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. All species of UK bats are designated as 'European protected species'. Seven species of bat (soprano pipistrelle (*Pipistrellus pygmaeus*), barbastelle (*Barbastella barbastellus*), Bechstein's (*Myotis bechsteinii*), noctule (*Nyctalus noctula*), brown long-eared (*Plecotus aurita*), lesser horseshoe (*Rhinolophus hipposideros*) and greater horseshoe bats (*Rhinolophus ferrumequinum*)) are listed under Section 7 of the Environment (Wales) Act 2016 as being of principal importance for maintaining and enhancing biodiversity in Wales. All bat species occurring in Neath Port Talbot are also included in the LBAP, with suitable habitat creation for these species a priority.

### Impact Assessment of Proposed Development on Bats

It is unknown if any trees will need to be removed to facilitate a future development. However, this is considered to be unlikely given the location of the trees around the periphery of the site. Recommendations for the retention of trees are set out in Section 5. If these recommendations are followed, any direct impacts to bat roosts can likely be avoided.

If trees require felling, there remains some limited potential to result in the destruction of potential bat roosts, or the killing of any individuals that may be present within them. Further methods should be employed to avoid impacts to roosting bats.



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Development of the site into residential housing is likely to result in the total loss of the majority of suitable bat foraging habitat from the site, although it is not currently possible to accurately gauge the level of bat activity in the immediate vicinity of the site.

The construction of a residential development is likely to result in increased artificial light spilling onto any retained peripheral vegetation or properties, thus disturbing foraging and commuting bats. A sensitive lighting strategy must therefore be incorporated in to the design of the plots, as detailed in Section 5.

## Assessment of Proposed Development Against Bat Surveys for Professional Ecologists Guidance

The development proposals are likely to be of a type listed within Box 1 of section 1.2.3.2 of Bat Surveys for Professional Ecologists (Collins, 2016) and consequently, it is considered that bat surveys should be undertaken on the site. Section 8.6 of the Bat Surveys for Professional Ecologists (Collins, 2016) states that the level of survey effort should be proportionate to the likely use of the site by bats and the potential effects of the proposed development on the species present. The following factors confirm the need for such surveys:

- Potential for artificial lighting; and
- A change of use of the site.

### **4.5.3. Great Crested Newt**

#### Assessment of Ecological Value of Site for Great Crested Newt

All amphibian species, including Great Crested Newt, have aquatic egg and larval stages, and are therefore dependent on open water for successful breeding. There are no ponds or other areas of standing water present within the site. The site, therefore, is considered as having negligible potential for supporting breeding by any amphibian species. However, the site offers potential for terrestrial use by great crested newt. As a general rule, suitable habitats within 250m of a breeding pond are likely to be used most frequently by great crested newts (English Nature 2001). The absence of any such water bodies from within 500m of the site boundary, results in a very low likelihood of great crested newts being present within the site<sup>15</sup>. In addition, the lack of published records of this species within a 2km radius of the site supports this assessment. Therefore, despite the fact that the terrestrial habitats within the survey site are suitable for this species, the absence of any suitable water bodies within 500m of the site means that the likelihood of great crested newts being present within it is considered to be very low.

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<sup>15</sup> Great Crested Newts have been recorded migrating long distances: 1300m within a 7-week period by an immature individual great crested newt during a study by Kupfer (1998, detailed in Jehle *et al*/2011); 250m in a study by Beebee and Griffiths (200) and 120-360m in a study by Arntzen and Tenuis (1993). In addition, a study by Duff (1989) found that over half of a population of great crested newt overwintered in an area more than 120m away from the main breeding pond. However, long-distance migrations of great crested newts are rare, and most studies indicate that much shorter distances are typical (Jehle *et al*/2011).

## Legislation

Great Crested Newt is a 'European protected species' afforded full protection under both UK and European legislation. This protection extends to the habitats which support great crested newt and it is generally assumed that the species might be present in terrestrial habitats up to 500m of a breeding pond, depending on habitat quality, connectivity and population size. The great crested newt is a priority species in Wales Under Section 7 of the Environment (Wales) Act 2016. It is also included in the Neath Port Talbot County Borough Council Local Biodiversity Action Plan.

## Impact Assessment of Proposed Development on Great Crested Newt

Great crested newts are considered highly unlikely to be present within the proposed development site. No specific further measures are considered necessary as no negative impacts are likely to occur. However, advice is given in Section 5 in case any great crested newts are unexpectedly discovered on site.

### **4.5.4. Badgers**

#### Assessment of Ecological Value of Site for Badgers

Although no evidence of badgers was recorded on site, there is considered to be some limited potential for them to venture onto the site from the surrounding landscape (which contains ancient woodlands) to forage sporadically. However, the surrounding residential housing estate somewhat limits the suitability of the area immediately around the site for sett building.

## Legislation

Badgers are protected under the Protection of Badgers Act 1992. Protection applies both to the animal itself and to its nesting burrows (setts), and current interpretation of the Act also confers some protection to key foraging areas.

## Impact Assessment of Proposed Development on Badgers

Badgers may pass through occasionally when foraging or commuting. As badgers are nocturnal, it is considered unlikely that any resident badgers will be encountered on site during works, which will be undertaken during daylight hours. Certain construction methods are recommended in Section 5 to ensure that no badgers moving through the site are injured during the construction phase of the development.

### **4.5.5. Reptiles**

#### Assessment of Ecological Value of Site for Reptiles

The site contains a mosaic of habitats that could be utilised by reptiles and published records exist of all four of the common species, in proximity to the site. The site is therefore considered likely to support reptiles.

## Legislation

With the exception of smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*) (which are afforded greater protection), common reptiles are protected under Schedule 5 the Wildlife and Countryside Act 1981 (as amended). They are given so called 'partial protection', which prohibits the deliberate killing or injury of individuals. The habitats of common reptiles are not specifically protected. These species are listed as priority species in Wales Under Section 7 of the Environment (Wales) Act 2016.

## Impact Assessment of Proposed Development on Reptiles

The proposals are likely to involve the clearance of the site to facilitate the development. Given the good quality habitat on site, and given the number of local reptile records, there is a risk that resident reptiles could be injured or killed during the development process. Longer-term impact would likely include habitat loss. Further surveys to identify the presence or absence of reptile populations in the site is therefore required before a firm assessment can be made on the potential impacts to this species group (See Section 5).

### **4.5.6. Hedgehog**

#### Assessment of Ecological Value of Site for Hedgehogs

Hedgehogs are considered likely to forage within the site, and could potentially nest and hibernate within the semi-improved grassland, scrub and brash piles. Small mammal paths and hedgehog droppings confirm this assessment.

## Legislation

Hedgehogs are afforded partial protection under the Wildlife and Countryside Act (1981) and are listed as priority species under Section 7 of the Environment (Wales) Act 2016. It is also listed in the Neath Port Talbot County Borough Council LBAP in light of dramatic population declines. The legislation afforded to hedgehogs in the Environment Wales Act (2016)) requires all public bodies including Local Authorities to have regard for biodiversity conservation<sup>16</sup> when carrying out their functions.

## Impact Assessment of Proposed Development on Hedgehogs

A potential residential development is likely to lead to permanent habitat loss, as well as the killing of individual hedgehogs. Assuming the majority of the site is to be cleared for development, the impact on potential hedgehog habitat on site is considered to be moderate and permanent. Mitigation measures are recommended in Section 5, to enable the requirements of the local planning authority to be met, namely the restoration or enhancement of hedgehog habitat as well as to avoid injuring hedgehogs during site clearance.

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<sup>16</sup> Biodiversity conservation in respect to hedgehog is interpreted as a commitment to restoring or enhancing their population.

## **4.5.7. Invertebrates**

### Assessment of Ecological Value of Site for Invertebrates

A high number of invertebrates were present on the site. This is likely due to the large number of flowering plants and shrubs on the site which is likely to provide niches for a wide range of invertebrate taxa.

### Assessment of Development Impacts of Proposed Development on Invertebrates

Developing the site into residential housing would likely remove the large majority of habitats attractive to invertebrates from the site. This is considered to be of a large magnitude at site level but of low regional significance given the widespread nature of the habitats on-site. Recommendations are detailed in Section 5 in order to reduce the potential negative impacts of a development on invertebrates.

## 5. Required Actions

The following recommendations are likely to be secured through planning conditions. They have been developed in the absence of detailed development proposals. It should be noted that they may be subject to change upon any changes made to the final design. The implementation of these recommendations will ensure compliance with the Planning Policy Wales (Welsh Government, 2016) and help to avoid or minimise adverse impacts on the environment and protected species, mitigate and compensate for losses where damage is unavoidable and promote opportunities to enhance biodiversity.

It is recommended that the following organisations and statutory bodies are contacted to agree the full scope of future ecology surveys at the site and to determine any additional requirements and planning obligations relating to ecology:

- Neath Port Talbot County Borough Council Planning and Development Department; and
- The Neath Port Talbot County Ecologist.

### 5.1. Further Survey Work

Works will not commence until the surveys below have been carried out. Results from these surveys will inform and allow for targeted recommendations for the avoidance (timing of works), future mitigation and compensation measures required as part of the development.

#### 5.1.1. Bats - Activity Transects

Table 8.3 of the Bat Survey Guidelines (2016) states that habitats with moderate suitability for bats should be subject to a transect and remote detector survey. Guidelines state that in moderate suitability sites, at least one survey visit per month (April to October) should be undertaken. However, given the relatively small scale of the site, the low number of bat records from the immediate area around the site, and given the residential nature of much of the surrounding habitat, a reduced survey effort is deemed sufficient in this case.

Activity transects should therefore be undertaken with at least one survey visit undertaken in each season (spring: April/ May, summer: June/ July/ August, autumn: September/ October) in appropriate weather conditions for bats. This is considered likely to provide sufficient information with which to inform an impact assessment for bats on the site. However, further surveys may be required if these survey visits reveal higher levels of bat activity than predicted by habitat alone.

A remote detector survey of the site is not considered practical as there is regular public access onto the site and no suitable trees or secure locations where a remote detector can be deployed.

This approach must be agreed with the county ecologist/local planning authority.

## **5.1.2. Reptiles**

Surveys to determine the presence/likely absence of reptiles should be carried out between April and September – ideally in the months of April, May, June or September (Natural England Technical Information Note TIN 102). The survey will need to follow the advice provided by the Herpetofauna Workers' Manual (Gent and Gibson, 2003), and comprise a 'direct search' and the monitoring of artificial and naturally occurring refugia placed in areas of the site assessed as being most attractive to reptiles.

A variety of different types of refugia should be used. Refugia will comprise primarily of squares of roofing felt, carpet tiles, corrugated metal tins and corrugated bitumen-based roofing felt of varying sizes but at least 60 x 60cm in size. Naturally occurring refugia including discarded logs, timber and large rocks etc. will also be checked. Where possible, artificial refugia should be laid in south-facing positions in areas deemed least likely to attract human interference. Refugia will be left undisturbed on site for two weeks, prior to commencement of the survey to allow the reptiles on the site sufficient time to find and start utilising them. The refugia will then be checked on at least seven separate occasions, non-consecutively, in suitable weather conditions (warm, overcast periods with low wind speeds) to record any reptile species beneath or basking upon them.

The survey results will determine whether reptiles are present on the site, and if so will provide the basis for designing and implementing a reptile mitigation strategy prior to the start of the development.

## **5.1.3. Invertebrates**

The site appears to support high numbers of invertebrates and should therefore be subject to further survey to ascertain if any rare, threatened or protected species are present, and to inform future management of the site post development. Field surveys should be carried out at the correct time of year, generally between May to early September. This approach should be finalised in consultation with an entomologist and in conjunction with the local planning ecologist.

## **5.2. Avoidance Measures**

### **5.2.1. Retention of Trees**

To avoid any direct impacts to potential bat roosts hidden underneath ivy growth within Trees 1, 2 or 3, felling of these trees should be avoided completely. The trees should be retained within the landscape framework of the development, with suitable management plans for the benefit of wildlife implemented.

Retained trees should be securely fenced-off to prevent accidental damage, prior to the commencement of construction work and treated in accordance with British Standard BS5837 (2012) *Trees in Relation to Design, Demolition and Construction – Recommendations*.

Trees 2 and 3 are more mature and of higher value to wildlife and should have a temporary fence erected around it which is at least as wide as the maximum canopy spread. This is to prevent accidental harm or damage to the tree, for example from the compaction of soil over the roots which may otherwise be caused by heavy vehicles tracking too close to the tree, oil spills onto the soil, collision damage to the bark and

boughs etc. The temporary fences referred to above should be left in place and maintained until development of the site has been completed.

## **5.2.2. Soft Felling**

In the unlikely event that Trees 1, 2 or 3 require felling to facilitate the development, the felling of the trees will commence with a licensed bat ecologist (NRW licence with bat handling specified) supervising a 'soft strip' to expose and remove all features of interest to bats such as the ivy. This will minimise the chance of bats being killed/injured. The ecologist will remain on site and supervise all aspects of the tree felling.

Tree surgeons undertaking felling works should be warned of the possible presence of roosting bats (and/or nesting birds), and of their protected status. It should be clearly understood that in the event of any bats (or occupied birds' nests) being found the contractor must halt works in the area surrounding the roost (i.e. at least 15m from the identified roost) and advice sought from the bat consultant or Natural Resources Wales.

Hollow sections of any tree, or any limbs with cavities etc, should be severed above and below the cavity, taking care not to cut through any potential cavities or hollows, and lowered to the ground with minimal force using rope slings. This technique is referred to as 'soft' felling. These techniques should be employed if the trees are subsequently found to have large cavities or split limbs.

Any removed hollow sections which cannot be fully examined for bats should be removed to a shaded location and left undisturbed on the ground in a safe condition for 24 hours. This will allow any bats present to rouse themselves and fly off after nightfall. The sections should be positioned on the ground so that access to the cavities is unobstructed, but so that the cavities will not become filled with rain water.

Particular care should be taken when chain-sawing into any obvious cavities, splits or hollows, with frequent checking to make sure that no bats (or birds) are concealed within.

## **5.3. Precautionary Measures**

### **5.3.1. Good Construction Practices for Badgers and Hedgehogs**

In line with good practice, any open trenches and excavations associated with the development will either be closed at night or a means of escape provided (e.g. plank at no greater angle than 45°) to help any badgers, hedgehogs or other trapped animals escape.

If there is a significant delay to development of the site (i.e. more than 12 months) an updated badger survey should be undertaken to determine if any new active setts have been created within the site.

Full details of vegetation clearance methods which limit the potential for killing and injury of hedgehogs will be made available on completion of the reptile surveys. The results of the reptile survey will have some bearing on the exact recommendations, however, any refugia will be searched before the area is cleared and a two-phased directional approach will likely be required for vegetation clearance.

These methods will also help to ensure that potential harm to great crested newts is avoided, in the unlikely event that any individual newts are found on site. In the event of great crested newt being encountered during any of the activities on site, then all works should stop immediately and the advice of an appropriately-qualified ecologist sought.

### **5.3.2. Vegetation Clearance**

To avoid adverse impacts to nesting birds, the clearance of vegetation including trees, scrub, bramble beds, ruderal vegetation or rank grassland habitats will be undertaken from September to February outside of the bird breeding season (March to August inclusive). Alternatively, any works undertaken from March to August will be subject to a check for nesting birds by a suitably qualified ecologist immediately prior to removal of such habitats. If any active nests are found these will be protected, along with an appropriate buffer zone of 5m, until the nesting is complete and the young have fledged<sup>17</sup>.

### **5.4. Mitigation, Compensation and Enhancement Measures**

Full details of mitigation compensation and enhancement measures will be determined following the completion of the further surveys detailed in Section 5.1. This may include the following and may include additional measures:

- A sensitive lighting strategy for bats;
- Retention/enhancement of some areas of habitat for the benefit of wildlife, for example bat/bird boxes and an insect tower;
- Restrictions on the timing of vegetation clearance;
- Species deterrence measures.

#### **5.4.1. Treatment of Japanese Knotweed**

Guidance should be sought from Natural Resources Wales or a Japanese knotweed specialist regarding the control of Japanese knotweed, in order to prevent further spreading. Measures should broadly follow advice given in the Environment Agency's<sup>18</sup> Japanese Knotweed Code of Practise<sup>19</sup> (2013) which include:

- Preparing and implementing a Japanese knotweed strategy for the site<sup>20</sup>;
- Appointing an ecological clerk of works responsible for the management of Japanese knotweed on the site; and
- Ensuring that site workers are made aware of what the plant looks like via a toolbox talk and of the measures required of them as detailed within the site Japanese knotweed strategy.

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<sup>17</sup> Some bird species, especially raptors and owls remain dependent upon the nesting site after fledging and so depending upon the species the nest site may need to be protected for a period of time after fledging.

<sup>18</sup> English guidance is used because no equivalent Welsh guidance has been produced by Natural Resources Wales

<sup>19</sup>[http://www.environment-agency.gov.uk/static/documents/Leisure/japnkot\\_1\\_a\\_1463028.pdf](http://www.environment-agency.gov.uk/static/documents/Leisure/japnkot_1_a_1463028.pdf)

<sup>20</sup> A template for which is available within the Japanese knotweed Code of Practice document.



## **5.5. Longevity of Report**

If development works do not begin within two years of the date of this report, an update survey is likely to be required in accordance with guidance from Natural Resources Wales (NRW)<sup>21</sup> and BS 42020:2013<sup>22</sup>, to determine if conditions have changed since those described in this report.

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<sup>21</sup> As set out in Point 5 of the NRW *Bat Surveys - Frequently Asked Questions* and Point 4 of the guidance included within the NRW European Protected Species Development Application Form.

<sup>22</sup> As set out in Section 6.2.1, point 7 which states that ecological information should not normally be more than two/three years old, or as stipulated in good practice guidance).

## 6. References and Bibliography

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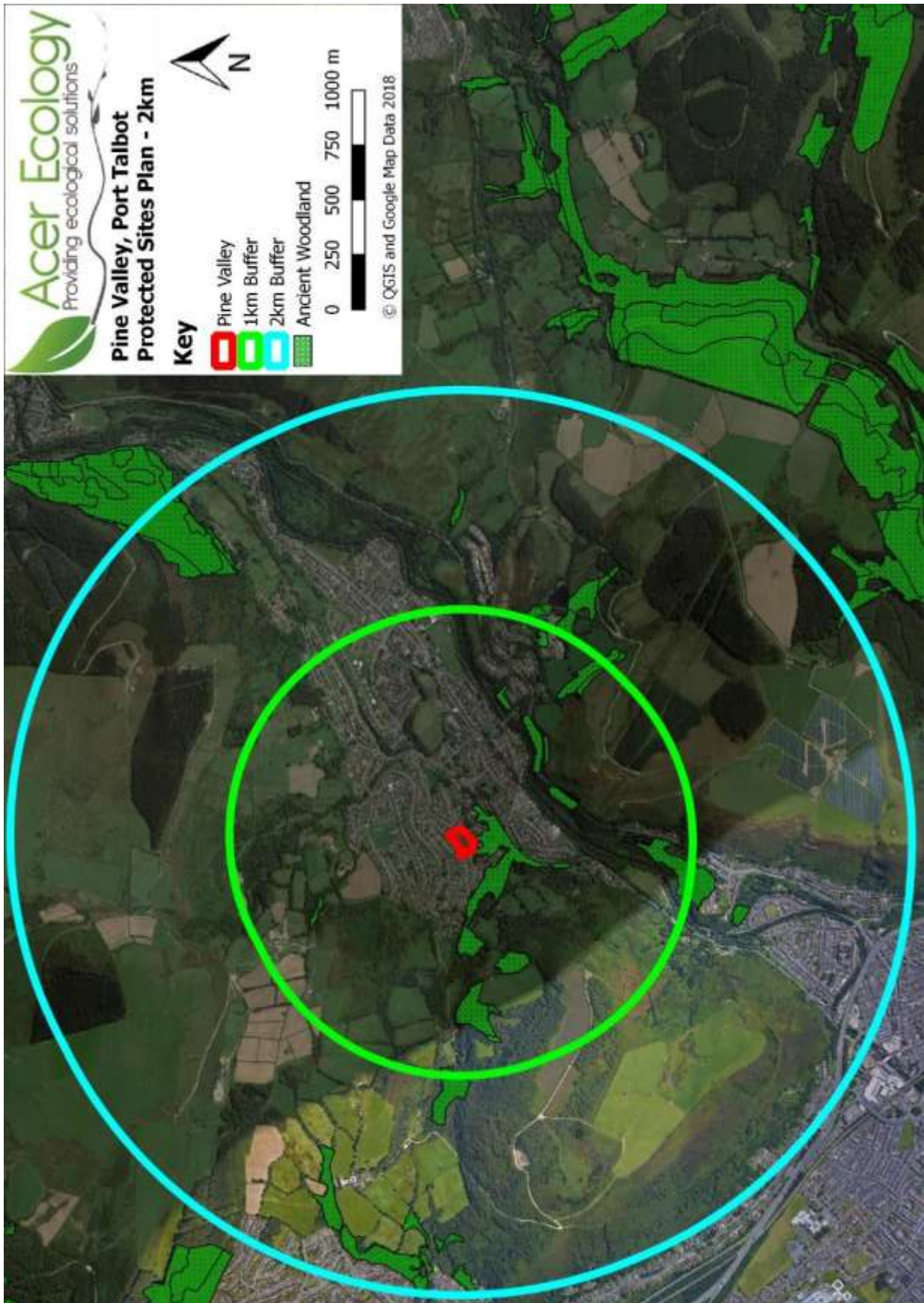
## Plan 1: Location Plan





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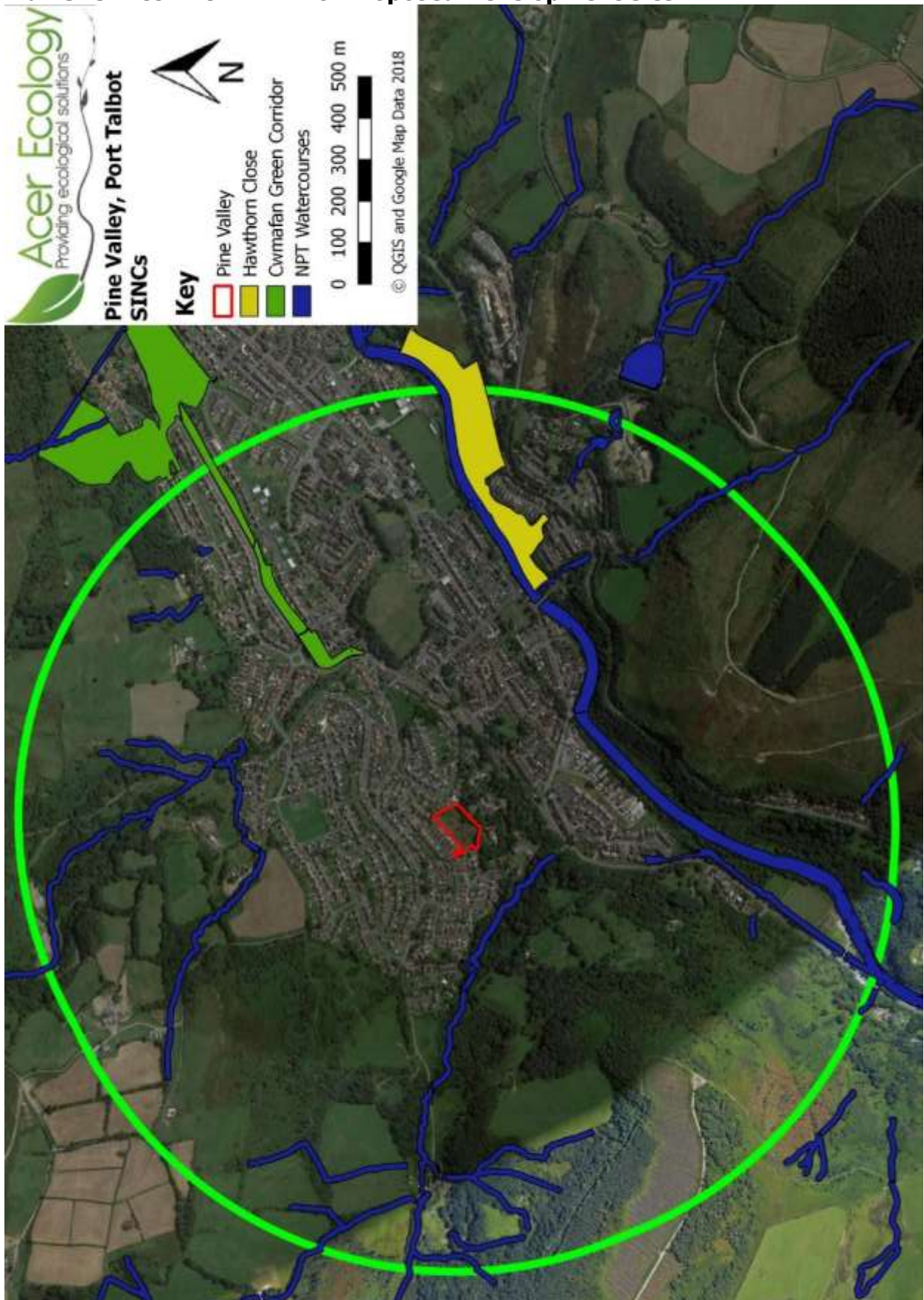
## Plan 2: Site Location and Protected Sites Plan





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## Plan 3: SINCs Within 1km of Proposed Development Site





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## Plan 4: Habitats and Vegetation



## **Appendix 1: Legislation and Policy Relating to Statutory and Non-Statutory Designated Sites**

### **ASNW and Woodland**

The Welsh Assembly has recognised that areas of ancient woodland are declining and becoming increasingly fragmented and emphasises the importance of conserving ancient woodland and its value as a biodiversity resource through the publication of Planning Policy Wales (2016). Furthermore, the UK Biodiversity Action Plan (UKBAP) includes objectives to conserve, and, where practicable, enhance: • the quality and range of wildlife habitats and ecosystems; • the overall populations and natural ranges of native species; • internationally important and threatened species, habitats and ecosystems; • species, habitats and natural and managed ecosystems characteristic of local areas; and • biodiversity of natural and semi-natural habitats where this has been diminished over recent decades.

Paragraph 5.2.9: "Trees, woodlands and hedgerows are of great importance, both as wildlife habitats and in terms of their contribution to landscape character and beauty. They also play a role in tackling climate change by trapping carbon and can provide a sustainable energy source. Local planning authorities should seek to protect trees, groups of trees and areas of woodland where they have natural heritage value or contribute to the character or amenity of a particular locality. Ancient and semi-natural woodlands are irreplaceable habitats of high biodiversity value which should be protected from development that would result in significant damage."

Paragraph 5.2.10: "Local planning authorities should, as appropriate, make full use of their powers to protect and plant trees to maintain and improve the appearance of the countryside and built up areas."

### **Environment (Wales) Act 2016**

The Environment (Wales) Act 2016 dictates that Local authorities have a duty to have regard to the conservation of biodiversity in exercising their functions. The duty affects all public authorities and aims to raise the profile and visibility of biodiversity, to clarify existing commitments relating to biodiversity, and to make it a natural and integral part of policy and decision making. Part 1 Section 7 of the Act provides a list of the living organisms of principal importance for maintaining and enhancing biodiversity in Wales.



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## Appendix 2: Species Recorded

Species	Common name	W	LM	LDA	PMR	Status
<b>Trees and Shrubs</b>						
<i>Acer pseudoplatanus</i>	Sycamore					Alien
<i>Buddleja davidii</i>	Buddleia					Alien
<i>Fagus sylvatica</i>	Beech					
<i>Ilex aquifolium</i>	Holly					
<i>Quercus cerris</i>	Turkey oak					Alien
<i>Quercus petraea</i>	Sessile oak	W				
<i>Rubus fruticosus</i> agg	Bramble					
<i>Salix cinerea</i>	Grey willow					
<i>Sambucus nigra</i>	Elder					
<i>Ulex europaeus</i>	Common gorse					
<i>Ulmus</i> sp	Elm species					
<b>Herbaceous Plants</b>						
<i>Agrostis capillaris</i>	Common bent					
<i>Alchemilla mollis</i>	Hairy lady's-mantle					
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass					
<i>Carex hirta</i>	Hairy sedge					
<i>Epilobium angustifolium</i>	Rosebay willowherb					
<i>Cirsium arvense</i>	Creeping thistle					
<i>Cirsium palustre</i>	Marsh thistle					
<i>Convolvulus arvensis</i>	Field bindweed					
<i>Crocsmia</i> sp	Montbretia					Alien
<i>Cynosurus cristatus</i>	Crested dog's-tail					
<i>Dactylis glomerata</i>	Cock's-foot					
<i>Elytrigia repens</i>	Couch grass					
<i>Epilobium hirsutum</i>	Great willowherb					
<i>Equisetum arvense</i>	Field horsetail					
<i>Fallopia japonica</i>	Japanese knotweed					Alien
<i>Filipendula ulmaria</i>	Meadowsweet				PMR	
<i>Galium aparine</i>	Cleavers					
<i>Holcus lanatus</i>	Yorkshire fog					
<i>Juncus effusus</i>	Soft rush					
<i>Juncus inflexus</i>	Hard rush					
<i>Lathyrus pratensis</i>	Meadow vetchling		LM			
<i>Linaria purpurea</i>	Purple toadflax					
<i>Lotus pedunculatus</i>	Greater bird's-foot-trefoil				PMR	
<i>Potentilla anserina</i>	Silverweed					
<i>Potentilla erecta</i>	Tormentil		LM	LDA	PMR	
<i>Prunella vulgaris</i>	Self-heal					
<i>Pulicaria dysenterica</i>	Common fleabane				PMR	
<i>Ranunculus repens</i>	Creeping buttercup					

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<i>Rumex obtusifolius</i>	Broad-leaved dock					
<i>Senecio jacobaea</i>	Common ragwort					
<i>Trifolium pratense</i>	Red clover		LM			
<i>Urtica dioica</i>	Common nettle					
<i>Vicia cracca</i>	Tufted vetch		LM			

<b>'Habitat Indicator Species' Totals (Wales Biodiversity Partnership 2008<sup>23</sup>)</b>	1	4	0	1	4	0	0
	<b>W</b>	<b>LM</b>	<b>CG</b>	<b>LDA</b>	<b>PMR</b>	<b>PIL</b>	<b>TF</b>

<b>'Primary' and 'Contributory' Totals (Wales Biodiversity Partnership 2008)</b>	0	0
	<b>Primary Species</b>	<b>Contributory Species</b>

## Key to Indicator Species (Wales Biodiversity Partnership 2008<sup>24</sup>)

W - Woodland, LM – Lowland meadow, CG - Calcareous Grassland, LDA – Lowland Dry Acid Grassland, PMR Purple moor-grass and rush pasture, PIL – Post Industrial Land, TF Species-rich Tillage Fields and Margins – PS – Primary Species, CS – Contributory Species

## SINC Selection

Sites which support one primary species or five contributory species; or habitats which support eight lowland meadow, eight calcareous grassland, seven lowland dry acid grassland, twelve purple moor-grass and rush pasture or eight tillage field and margins indicator species, should be considered for SINC selection. Post-industrial sites supporting 20 or more indicator species from the combined post-industrial land, acid, neutral, calcareous and marshy grassland lists should be also considered for selection.

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<sup>23</sup> Wales Biodiversity Partnership (2008) Wildlife Sites Guidance Wales: A Guide to Develop Local Wildlife Systems in Wales. Wales Biodiversity Partnership/Welsh Assembly Government.

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## Appendix 3: Definitions of Site Value

### International Value

Internationally designated or proposed sites such as Ramsar Sites, Special Protection Areas, Biosphere Reserves and Special Areas of Conservation, or non-designated sites meeting criteria for international designation. Sites supporting populations of internationally important species or habitats.

### National Value

Nationally designated sites such as Sites of Special Scientific Interest (SSSIs), or non-designated sites meeting SSSI selection criteria (NCC 1989), National Nature Reserves (NNRs) or Nature Conservancy Review (NCR) Grade 1 sites, viable areas of key habitats within the UK Biodiversity Action Plan. Sites supporting viable breeding populations of Red Data Book (RDB) species (excluding scarce species), or supplying critical elements of their habitat requirements.

### Regional Value

Sites containing viable areas of threatened habitats listed in a regional Biodiversity Action Plan, comfortably exceeding Site of Importance for Nature Conservation (SINC) criteria, but not meeting SSSI selection criteria. Sites supporting regionally significant areas of BAP habitats or large and viable populations Nationally Scarce species, or those included in the Regional Biodiversity Action Plan on account of their rarity, or supplying critical elements of their habitat requirements.

### County Value/District Value

Site identified as a Site of Importance to Nature Conservation (SINC) at the district level; meeting South Wales Wildlife Sites Partnership (SWWSP) 2004 published designation criteria, but falling short of SSSI designation criteria, whether designated as a SINC or not. Ancient woodlands and sites supporting regionally significant areas of UK BAP habitat. Large scale examples of BAP habitats or areas supporting small populations of protected, UK BAP/ LBAP or threatened species (other than badger).

### High Local

Habitats which just fail to meet Regional value criteria, but which appreciably enrich the ecological resource of the locality. Sites supporting species which are notable or uncommon in the county; or species which are uncommon, local or habitat-restricted nationally, and which might not otherwise be present in the area. Moderate scale examples of BAP habitats or areas supporting small populations of protected, UK BAP/ LBAP or threatened species.

### Local Value

Old hedges, woodlands, ponds, significant areas of species-rich grassland, small scale examples of BAP habitats or areas supporting small populations of protected, UK BAP/ LBAP or threatened species. Undesignated sites or features which appreciably enrich the habitat resource in the context of their immediate surroundings, parish or neighbourhood (e.g. a species-rich hedgerow). Rare or uncommon species may occur but are not restricted to the site or critically dependent upon it for their survival in the area.

### Site Value (within the immediate zone of influence)

Low-grade and widespread habitats. Woodland plantations, structured planting, small areas of species-rich grassland and other species-rich habitats not included in the UK or Local BAP.

### Negligible

No apparent nature conservation value.

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## Appendix 4: Guidelines for Assessing Potential Suitability of Proposed Development Site for Bats

Suitability	Commuting and Foraging Habitat
Negligible	Negligible habitat features on-site likely to be used by commuting and foraging bats.
Low	<p><u>Commuting Habitat</u> Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.</p> <p><u>Foraging Habitat</u> Suitable but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.</p>
Moderate	<p><u>Commuting Habitat</u> Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.</p> <p><u>Foraging Habitat</u> Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</p>
High	<p><u>Commuting Habitat</u> Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.</p> <p><u>Foraging Habitat</u> High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.</p> <p><u>Proximity to Known Bat Roosts</u> Site is close to and connected to known roosts.</p>

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## Appendix 5: Bat Survey Protocol for Trees Affected by Arboricultural Work

Suitability	Description of Roosting Habitat	Commuting and Foraging Habitat
Negligible (T4)		Negligible habitat features on site likely to be used by commuting and foraging bats.
Low (T1, T2, T3)	A tree of sufficient size and age to contain PRFs but with none seen from the ground <sup>25</sup> .	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.  Suitable but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only) the assessments in this table are made irrespective of conservation status, which is established after presence is confirmed.	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.  Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.  High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.  Site is close to and connected to known roosts.

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<sup>25</sup> This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015).