

Preliminary Ecological Assessment



Project: Land at Penyworlod Farm, Caldicot

Instructed by: Sarah Pitman

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

Author	Date	Version
Lewis Badham	28th October 2022	V1.0

T: 07751979403

E: lewis@ecologicalservices.wales

W: www.ecologicalservices.wales

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1. Introduction

The client is seeking permission to extend and convert a dilapidated single storey cottage within an area of pastureland in Penhow, Caldicot. It is also proposed to erect a small L shaped stable block in the south of the site. It is anticipated that small areas of semi-improved neutral grassland, bramble scrub and lengths of hedgerow will be lost to the development.

The proposed site is centred at approximately ST 41310 92279. The site comprises a standard tree, hedgerows, bramble scrub, bracken, semi-improved neutral grassland and a dilapidated stone cottage. This report will assess the potential of the land within the site boundary to support protected habitats and species and the implications that any future development proposals could have on them.

1.1 Site Description

The proposed development site is roughly rectangular in shape and is generally flat. The site measures approximately 1.1 acres in size. The site forms apart of a larger agricultural field, currently utilised as pastureland for a flock of sheep. Further agricultural fields are found to the south, east and north of the site. A small country road lies to the east of the site.

The wider area is considered to be largely rural with a patchwork of agricultural fields and areas of woodland found in the local landscape.

1.2 Survey Constraints

The optimal time period to carry out ground-based visual assessments of trees for bat potential is between December to March inclusive, when broad-leaved trees are devoid of leaves and features are more readily visible. It should be noted that ground based assessments are inherently constrained and potential roosting features present upon the skyward facing surfaces of limbs and branches will most likely be missed.

1.3 Surveyor Experience

Lewis is an ecologist with 4 years experience undertaking a wide range of flora and fauna surveys. All survey work is undertaken following JNCC Phase 1 Survey Guidelines, CIEEM Guidelines for Preliminary Ecological Appraisal (2013) and CIEEM Guidelines for Ecological Report Writing (2nd Ed 2017).

2. Desktop Study

A data search was undertaken via Aderyn (LERC Reference: 0223-175) for the proposed development site and surrounding area. A 1km buffer zone was searched and records returned within 500m of site are noted below:

- Bats: historical Brown Long-eared Bat roost record from 1987 approximately 290m away.
- Flowering Plants: Bluebell (260m)
- Badger: historical records of badger setts from 1977

Records of note returned for the rest of the buffer zone are detailed below:

- Amphibians: Common toad
- Dormouse
- Barn Owl
- Hedgehog

2.1 Protected Sites

A data search for species records was undertaken for the proposed development site and surrounding area. The search also considered statutory and non-statutory protected sites.

Statutory Protected Sites

The Parc Seymour Woods Site of Special Scientific Interest (SSSI) lies approximately 60m west of the site. The SSSI is designated for its coppice sessile oak woodland and considered to be the last major area of ancient woodland of Wentwood Forest.

Non-Statutory Protected Sites

Several sites of Importance for Nature Conservation (SINCs) lie within 1km of the site, the nearest of which, the Penyworlod Farm Wood SINC, is situated 50m east.

Other SINCs within 1km include:

- Wentwood Forest, approximately 500m north-west;
- Parklands, approximately 600m south-west;

- Spout Field, approximately 710m west;
- Round Wood, approximately 770m south-east;
- Badnam's Wood, approximately 910m south-east.

There are many areas of Ancient Semi Natural Woodland within 2km of the site. These woodlands have been identified as Priority Areas by Natural Resources Wales (NRW) as they comprise mostly broadleaved native trees and shrubs believed to have been in existence for over 400 years. The nearest Ancient Semi Natural Woodland lies approximately 50m away to the west. This includes Parc Seymour Woods SSSI.

Hedgerow is present along the east and south site boundary. Hedgerow is a section 7 habitat considered to be of principal importance for maintaining and enhancing biodiversity. Section 7 habitats are listed under the Environment Wales Act (2016).

2.2 Potential Impacts to Protected Sites

Given the small scale of the proposed development it is considered unlikely to have any impacts on protected sites within 2km of the site.

The hedgerows on site are considered to be Section 7 habitat under the Environment Wales Act (2016) therefore, any loss of this habitat will require appropriate levels of compensation and mitigation. Development plans highlight the removal of a portion of Hedgerow 1 along the eastern boundary to facilitate the development. It is suggested that for every 1m of hedgerow removed it is replaced with 2m of new native planting. Consideration to the translocation of hedgerow to be removed should be given.

3. Phase 1 Survey

3.1 Habitats

A walkover survey of the site was completed on the **17th June 2022**. All areas of the site were accessible. A species list can be found in Appendix 1, photographs of the site can be found in Appendix 2 and a map of the habitats found within the site is provided in Appendix 3.

The vast majority of the development site is considered to consist of an area of semi-improved neutral grassland with surrounding hedgerows and a boundary tree. Areas of bramble scrub and a dilapidated stone cottage are also present.

A single storey **dilapidated stone cottage**, currently utilised as a shelter for livestock, is situated in the north-west of the site. An original stone fireplace is situated along the northern side of the building.

The **semi-improved neutral grassland** was long at the time of survey with a sward height of approximately 100cm, with typical graminoid species present including perennial rye grass, crested dog's tail, meadow foxtail, cock's-foot, sweet vernal grass, red fescue and Yorkshire fog. Forb species interspersed among the grassland include broad-leaved dock, spear thistle and meadow buttercup.

Two distinct areas of **bramble scrub** are situated within the site. One area wraps around the western side of the dilapidated cottage, while the other forms apart of the western boundary. Areas of **continuous bracken** lie along the western and southern boundaries.

Two **hedgerows** bound the site boundary. H1 constitutes the eastern boundary and contains species such as ash, bramble, dogwood, field maple, holly, privet, dog rose, goat willow, gorse, hawthorn, blackthorn and hazel. H2 which constitutes a portion of the southern boundary comprises species such as bramble, hazel, sycamore and holly.

A single standard **tree, a mature ash**, is situated in the north-western corner of the site.

3.2 Great Crested Newts

Great crested newts (*Triturus cristatus*) are a European protected species and are protected under the Conservation of Habitats and Species Regulations 2017. In summary, they are protected from:

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

- Deliberate taking or destroying of eggs,
- Damage or destruction of a breeding site or resting place.

Great crested newts (GCN) are listed on schedule 5 of The Wildlife & Countryside Act 1981 which protects them from intentional or reckless disturbance or obstruction when using a structure or place for shelter and / or protection. It is also an offence to sell, offer or expose for sale a great crested newt. Great crested newt and common toad are listed in section 7 of the Environment (Wales) Act 2016 which makes them key species to sustain and improve biodiversity.

No records for GCN occur within 2km of the site. No suitable breeding habitat was seen within the site. No standing water bodies are apparent within 500m on OS maps. The possible presence of ponds within the gardens of surrounding houses cannot be discounted.

The habitats of the site, namely scrub habitats, hedgerows and grassland, are considered to be suitable terrestrial habitat for this species. The tree roots of the site may also provide hibernation potential; however, given the lack of local records and apparent lack of breeding habitat within the local vicinity, **it is considered unlikely that this species is present within the site and no further recommendations are made for this species.**

3.3 Dormouse

The dormouse (*Muscardinus avellanarius*) is a European protected species and is protected under the Conservation of Habitats and Species Regulations 2017. In summary, they are protected from:

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

Dormouse is listed on schedule 5 of The Wildlife & Countryside Act 1981 which protects them from intentional or reckless disturbance or obstruction when using a structure or place for shelter and / or protection. It is also an offence to sell, offer or expose for sale a native dormouse. Dormouse is listed in section 7 of the Environment (Wales) Act 2016 which makes them a key species to sustain and improve biodiversity.

Several records for dormouse returned within 2km of the site, the nearest of which is situated approximately 5000m to the north east and associated with Wentwood Forest. No details of the record are provided however. Another dormouse record is present 560m south-east, relating to the finding of a dead individual, predated by a cat, in 1997.

It is considered possible that dormouse may utilise the hedgerows within the site, especially the hedgerow which constitutes the eastern boundary, as this feature appears to be well connected to other hedgerows and areas of woodland within the local vicinity, allowing dormouse to potentially commute to / from the site. No signs of this species, namely characteristically constructed nests nor handled nuts, were seen during the current survey.

Due to only a small section, roughly 15m, of hedgerow requiring pruning / removal works to facilitate the required visibility splays, and only a relatively small amount of suitable habitat present on site, a full suite of nest tube surveys to ascertain potential presence / absence is considered unfeasible and disproportionate in this instance, as not enough tubes will be able to be deployed across the land within the clients ownership to achieve the required survey effort. In addition, dormouse exist in low population densities, further reducing the likelihood of detection via a nest tube survey approach.

It is recommended to proceed with a method statement approach for clearance of suitable habitat under the auspices of a suitably qualified and licensed ecologist. If signs of or actual dormice are found during clearance works, all works must cease and the relevant licenses applied for from Natural Resources Wales (NRW) prior to the resumption of works.

3.4 [Bats](#)

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

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

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

The nearest recorded roost is approximately 290m from the property and relates to a Brown Long Eared Bat maternity roost from 1987; 840m from the property is a record for both a Common Pipistrelle and a Lesser Horseshoe Bat maternity roost from 2010; and 845m from the property is a record for a Common Pipistrelle day roost from 1991. There are no commuting or foraging records for bats within 1km of the property.

Surveys of Dilapidated Stone Cottage

Initial site visit alluded to the presence of potential Lesser Horseshoe Bats roosting within the chimney of the structure. Further emergence surveys revealed / confirmed the presence of a Lesser Horseshoe Bat maternity roost within the structure. **Full details of the survey and appropriate mitigation measures for bats can be found within the accompanying ‘Bat Survey: Penyworlod Farm Barn, Penhow, Caldicot, NP26 3AJ’ report.**

Tree Assessment

The trees along the proposed development site boundary were subject to a cursory ground level assessment for the potential presence of roosting bats. Should any tree be considered likely to have above low potential for roosting use, further detailed survey work will be recommended following the ground based visual assessment methodology provided in the BCT Survey Guidelines 2016 (2nd Ed).

A single mature ash tree lies within the north-west of the site and was noted for its potential to support roosting bats, full details of which can be found in Table 1 below. The approximate location of the trees are shown on the habitat map in Appendix 3. **If T1 cannot be retained, further survey work for bats may be required.**

Table 1. Bat Roosting Potential of Trees

Tree Number (T)	Species	Diameter at Breast Height (DBH)	Potential Roosting Feature (PRF)	Feature Aspect	Roosting Potential
1	Ash	150cm	Decaying branches with possible gaps and crevices Knot Hole 6m above ground level Dense Ivy which may be obscuring PRFs from view Of age and size PRFs expected to occur	East & South South - -	Moderate - High

3.5 Otters

The common otter (*Lutra lutra*) is a European protected species and is protected under the Conservation of Habitats and Species Regulations 2017. In summary, they are protected from:

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

Otter are listed on schedule 5 of The Wildlife & Countryside Act 1981 which protects them from intentional or reckless disturbance or obstruction when using a structure or place for shelter and / or protection. It is also an offence to sell, offer or expose for sale an otter. Otter is listed in section 7 of the Environment (Wales) Act 2016 which makes them a key species to sustain and improve biodiversity.

No records for otter returned within 1km of the site. Otters tend to prefer secluded locations for their holts to help prevent them being disturbed by other animals. It is accepted that otters can travel long distances from river corridors to find acceptable holt sites. A small stream is shown on OS maps approximately 100m to the east of the development site at its closest point. Penyworlod Farm Wood SINC and Parc Seymour SSSI do appear to provide habitat which an otter may utilise for breeding or resting purposes. The proposed development site sits between the closest point of here two features

No evidence of large mammal movement across the site was noted during the site visit. The habitats within the site boundary are considered to be unsuitable for use by otter. The site offers limited sheltering potential while the area is also subject to disturbance from livestock, agricultural practices and roads. **It is considered highly unlikely that this species occurs on site and no further recommendations are made for this species.**

3.6 Badger

Badgers are protected under the Protection of Badgers Act 1992. In summary they are protected from:

- Taking, killing or injuring;
- Cruelty;
- Interfering with a badger sett;
- The selling and possession of badgers;
- Marking or ringing.

Badgers are also listed on schedule 6 of the Wildlife and Countryside Act 1981 as amended.

Badgers tend to have a variety of setts with different uses and functions within the territory for the family unit. In general there is usually a main sett which the family will use the most. There are then annex, subsidiary and or outlier setts which depending on family structures and environmental pressures may be used at different times of the year. As female badgers tend to have their cubs over winter the disturbance and damage of badger setts is prohibited between December and June inclusive. NRW are the licensing body for any actions which may contravene the above legislation.

There are two records for the presence of badger within 1km of the proposed development site, both are situated within the Parc Seymour Woods to the west of the site, approximately 50m to the west.

Badgers favour a dry sloping site for digging their setts preferably within woodland or even under a large hedgerow bank. Badgers are creatures of habit and tend to follow regular pathways between their setts and foraging grounds.

No evidence of the presence of badger such as hairs snagged on fencing, latrines, digging or evidence of regular pathways was found within the proposed development site. No evidence of sett creation was found within and around the hedgerow habitats within the proposed development site.

It is thought highly unlikely that badger is present within the site boundary and no further recommendations are made for this species. They may however pass through the site at least on occasion for foraging and commuting purposes.

3.7 Birds

All breeding birds are protected under schedule 1 of the Wildlife and Countryside Act (1981) as amended. Under this Act it is an offence to:

- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built.
- Intentionally take or destroy the egg of any wild bird.

Enhanced protection is afforded to species listed on Schedule 1 of the Act, this additional protection makes it an offence to:

- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Species of bird listed under Schedule 1 (WCA1.1) of the WCA 1981 returned from the data trawl within 2km and include Red Crossbill, Firecrest, Fieldfare, Red Kite, Barn Owl, Brambling and Redwing. The habitats of the site are considered unsuitable for any of the above species to nest.

Other notable bird species listed under Section 7 (S7) of the Environment (Wales) Act 2016 within 1km of the site include Lesser Redpoll, Bullfinch, Linnet, Willow Tit, Lesser Spotted Woodpecker, Lapwing, Starling, House Sparrow, Song Thrush and Dunnock.

Nesting opportunities occur in the building, trees, hedgerows and scrub habitats around the site periphery and undergrowth. **If trees or hedgerows require removal or pruning, precautionary measures for nesting birds will need to be put in place and are included in the recommendation section of the report.**

3.8 Reptiles and Amphibians

Reptiles such as the slow worm, common lizard, adder and grass snake are protected under the Wildlife and Countryside Act 1981(as amended). They are protected from killing, injuring and sale. They are protected from killing, injuring and sale. They are also listed in section 6 of The Environment (Wales) Act 2016.

The four widespread species of amphibian i.e. the smooth and palmate newts, common frog and common toad, are protected under the Wildlife and Countryside Act 1981 (as amended) by Section 9(5) of the Wildlife and Countryside Act 1981. This section prohibits sale of these species.

Other amphibians records returned within 1km include only the the presence of common toad (1.7km).

The habitats present provide suitable sheltering and basking opportunities for reptiles, with a mosaic of grassland, scrub and ruderal vegetation, with hedgerows and a tree present, providing diverse vegetation structure. Habitat connectivity exists in full surround. The habitats of the site are thought to have moderate suitability for reptiles.

A small area of grassland requires removal to facilitate the construction of the extension to the original building, and for the construction of the proposed stables. A small section of hedgerow also requires removal to facilitate the creation of visibility splays into the site.

As the development footprint within the plot is relatively small, with large areas of natural habitat will be retained on site, it is recommended that a suitable reptile method statement is devised to ensure reptiles are safeguarded from reckless injury and death during clearance works. **It is recommended that reptiles are pushed into areas of retained habitat, and**

allowed to recolonise the site once the area has been landscaped and enhanced to mitigate the loss of reptile habitat.

3.9 Other Mammals

Other notable mammal species listed under S7 of the Environment (Wales) Act 2016 which returned records within 2km include Hedgehog (800m)

Hedgehog is considered likely to be present within the site at least on occasion. Hedgehog is considered to be a species of principal importance, for the purpose of maintaining and enhancing biodiversity in relation to Wales. As such consideration must be given to this species in any plans proposed for the site.

3.10 Invertebrates

Numerous records for various types of invertebrate returned from the data trial within 1km.

Many notable Lepidopteran (Butterflies & Moths) records, those species that are listed under S7 of the Environment (Wales) Act 2016, returned from the data trawl and include Figure of Eight, Barred Sallow, Beaded Chestnut among many other moth records.

The habitats of the site were assessed for their potential to support invertebrates using the Invertebrate Habitat Potential Assessment (IHPA) as found in CIEEM inpractice Issue 112, June 2021. The IHPA protocol has been produced to allow ecologists without specialised entomological expertise to identify key habitats and features likely to support important invertebrate assemblages. Full details of habitat types can be found in Appendix 5.

Habitat Element	Grade
Decaying Wood – H1	D - Minor
Rotational Management – H2	E – Negligible/Absent
Nectar Resources – H3	D - Minor
Wet Substrates – H4	D - Minor
Other Water Habitats – H5	E - Negligible/Absent
Structural Patchwork – H6	E – Negligible/Absent
Still Air (S) – H7	D - Minor
Still Air (H) – H8	E – Negligible/Absent
Connectivity – H9	E – Negligible/Absent
Ecoclinal – H10	E – Negligible/Absent

Bare Earth – H11	E - Negligible/Absent
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Based on the Invertebrate Habitat Potential Assessment (IHPA) the site, in its current state, is considered to have potential to support common and widespread generalist species of invertebrate.

4. Recommendations and Mitigation

The client is seeking permission to extend and convert a dilapidated single storey cottage within an area of pastureland in Penhow, Caldicot. It is also proposed to erect an L shaped small stable block in the south of the site. It is anticipated that small areas of semi-improved neutral grassland, bramble scrub and lengths of hedgerow will be lost to the development.

Recommendations relating to bats are presented in a separate bat report titled '**Bat Survey: Penyworlod Farm Barn, Penhow, Caldicot, NP26 3AJ**' and should be read alongside this report.

Broad recommendations are made below to help inform the design process. **Once the development proposals are progressed and further survey work and enhancement measures agreed within the site, further ecological input may be required.** Our general recommendations are:

- A **Reptile Mitigation Strategy** will be devised to ensure that potential reptiles are not recklessly killed / injured during clearance operations. In short, the areas of grassland should be subject to a two-stage cut, moving in a westwards direction, towards areas of retained habitat. The site should be enhanced / managed to the benefit of reptiles, with areas of grassland subject to a varying mowing regime, resulting in a mosaic of vegetation heights across the site. Reptiles will then recolonise the habitats of the site of their own accord post development.
- Hedgerow removal must be avoided where possible. Should any hedgerow require removal to facilitate the development. The habitat will be translocated to another location within the site boundary if possible. If translocation is not possible, additional hedgerow creation within the site boundary must be provided. The applicant must aim for at least double the amount of hedgerow to be created to that which is lost.
- Any hedgerow or tree planting within the site boundary will require an aftercare schedule to ensure the planting is maintained and allowed to establish into mature vegetation. The replacement of any failed planting will be required. Suitable management of hedgerows, once established, must also be secured.
- Vegetation clearance within the Hedgerow along the eastern boundary, to facilitate the creation of the visibility splays along the road will be directly supervised by a suitably experienced and licensed ecologist. If signs of dormouse are seen at any time, works will mandatorily cease; the supervising ecologist will then consult the

appropriate authorities to commence an application for specific licenses / advice on how to proceed.

- A root protection zone (RPZ) must be implemented around any retained trees or hedgerows which lie adjacent to the boundary of the proposed development site. British Standard BS 5837, *Trees in relation to design, demolition and construction - Recommendations* will be followed. Measures will include clear marking of the RPZ to guarantee no machinery is used or digging carried out in that area. This will ensure that there is no detrimental impact to the trees and the flora or fauna it supports.
- The trees and hedgerows of the site have potential for use by nesting birds. Any tree or hedgerow removal must be completed outside of the bird nesting season of March to August inclusive. If this is not achievable an ecologist must inspect any vegetation with the potential for birds to be present for active birds' nests prior to removal works beginning. If an active nest is identified a buffer zone of at least 5m around the nest must be observed until the chicks have fledged. Only then can the vegetation be removed. Greater buffer zones around nests may be required depending on the species and habitat the nest is within.
- Careful consideration must be given to the use of lighting within the developed site, as this can adversely affect the activity of a variety of fauna, particularly foraging bats, nesting birds and invertebrates. Light spillage into adjacent semi-natural habitats must be avoided and brightness kept to the lowest permissible level in the areas adjacent to such habitats.
- All lighting must meet recommendations in the BCT Guidance Note 08/18 Bats and artificial lighting in the UK document <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

The Environment Act (Wales) 2016 places a duty on competent authorities such as Monmouthshire County Council to conserve and enhance biodiversity. The below bullet points are some simple measures that could be achieved to enhance the biodiversity of the site:

- The provision of bat and or bird boxes of varying design in suitable locations within the development site. These could include integrated boxes built into buildings as well as small and large holed boxes on the mature trees retained during works.
- The use of native species within the soft landscaping works on the site. Suitable long term management of soft landscaping also helps ensure spaces are useful to

wildlife. Hedgerow and tree planting in public spaces create habitat for wildlife and an attractive space for people.

- All fencing around the site will be hedgehog friendly in design. A friendly design is considered to allow passage of small animals across the site. Close board or mesh fencing should provide either a continuous gap between the bottom of the fence and ground of approximately 13cm or 13cm by 13cm gaps cut every 3m along fencing.

Appendix 1 – Plant Species Recorded

Species	Common Name
Trees & Scrub	
<i>Acer campestre</i>	Field Maple
<i>Acer pseudoplatanus</i>	Sycamore
<i>Betulus pendula</i>	Silver Birch
<i>Cornus sanguinea</i>	Dogwood
<i>Corylus avellana</i>	Hazel
<i>Ilex aquifolium</i>	Holly
<i>Hedera helix</i>	Ivy
<i>Ligustrum ovalifolium</i>	Privet
<i>Prunus spinosa</i>	Blackthorn
<i>Rubus fruticosus</i> agg	Bramble
<i>Crataegus monogyna</i>	Hawthorn
<i>Sambucus nigra</i>	Elder
<i>Fraxinus excelsior</i>	Ash
Herbaceous Plants	
<i>Alopecurus pratense</i>	Meadow Foxtail
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass
<i>Cirsium arvense</i>	Creeping thistle
<i>Cynosurus cristatus</i>	Crested Dog's-tail
<i>Dactylis glomerata</i>	cock's-foot
<i>Festuca rubra</i>	Red Fescue
<i>Holcus lanatus</i>	yorkshire fog
<i>Lolium perenne</i>	Perennial Rye Grass
<i>Plantago lanceolata</i>	ribwort plantain
<i>Pteridium aquilinum</i>	Bracken
<i>Prunella vulgaris</i>	Selfheal
<i>Rumex obtusifolius</i>	Broad-leaved Dock
<i>Ranunculus acris</i>	Meadow Buttercup
<i>Ranunculus repens</i>	Creeping Buttercup
<i>Taraxacum officinalis</i> agg.	Dandelion
<i>Trifolium pratense</i>	Red Clover
<i>Trifolium repens</i>	White Clover
<i>Urtica dioica</i>	Nettle

Appendix 2 – Site Photographs



Overview of grassland and dilapidated cottage in the north of the site - facing west



Semi-improved grassland adjacent to hedgerow along the eastern boundary - facing south



Bramble scrub adjacent to dilapidated stone cottage - facing south-west



Mature ash tree in the north-western corner of the site.



Bramble scrub along the western boundary - facing west



Continuous bracken along the western boundary - facing south-west



Hedgerow along southern boundary - facing south-west










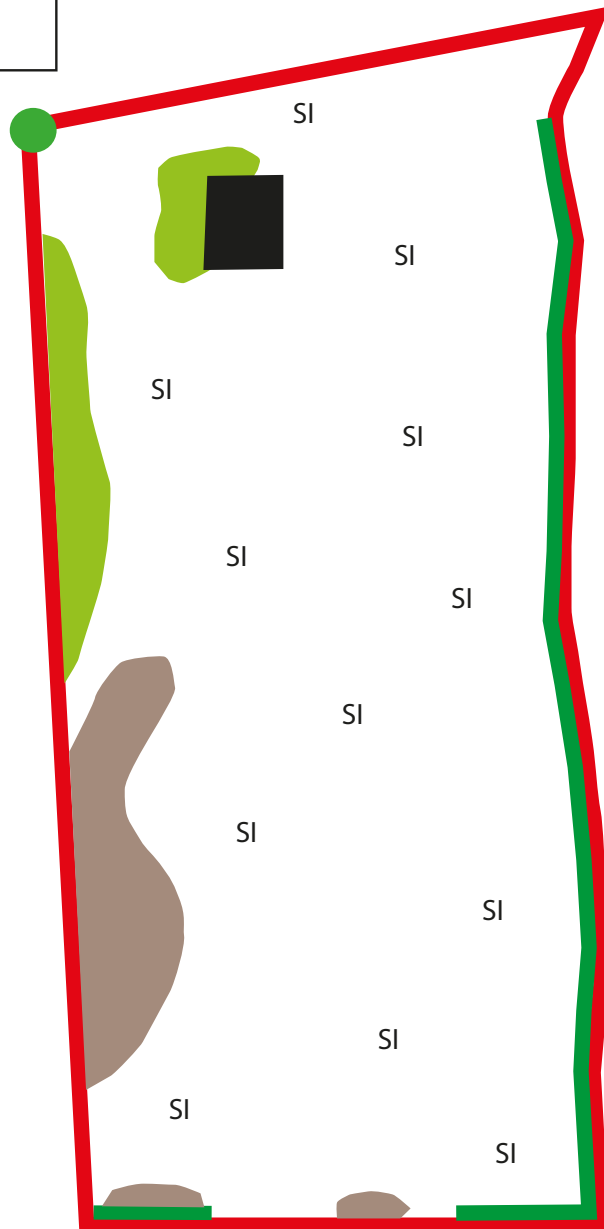
Hedgerow along eastern boundary - facing north-east

Appendix 3– Site Habitat Map

LAND AT PENYWORLD FRAM, CALDICOT
Habitat Map
June 2022



	Dense Bracken
	Bramble Scrub
	Building
	Semi Improved Grassland
	Hedgerow
	Standard Tree
	Site Boundary



Appendix 4 - Aerial View of Site Location



Appendix 5 – Invertebrate Habitat Potential Assessment

Table 1. Summary of the 11 habitat elements assessed by IHP survey.

Habitat element	No.	Comments
Decaying Wood	HE1	In all its forms; from decaying wood on/in large trees to woodland floor debris
Rotational Management	HE2	Planned or serendipitous; and whether for nature conservation or other purposes
Nectar Resources	HE3	As a proxy for nectar- and pollen resources, as assessment of pollen resources is impracticable on a walk-through survey
Wet Substrates	HE4	Including marginal, marshy, muddy and seasonally inundated habitats, as well as flushes
Open Water Habitats	HE5	The open water element of rivers, lakes, ponds, streams, ditches, etc.
Structural Patchwork	HE6	Habitat mosaics, including, but by no means restricted to open mosaic habitats on previously developed land
Still Air (S)	HE7	Suntraps and still-air microclimates in open situations; the term 'still air' is used in preference to 'wind breaks' as many rigid wind breaks are likely to produce turbulent air in their lee
Still Air (H)	HE8	Humid still-air microclimates in sheltered and shaded situations
Connectivity	HE9	Landscape-scale connectivity between the site and external habitats
Ecoclines	HE10	A graded transition between two or more broad habitats
Bare Earth	HE11	Unshaded bare or sparsely vegetated well-drained substrate, regardless of soil type