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ECOLOGICAL IMPACT ASSESSMENT REPORT

LAND AT BRONDEG

FAY THOMAS

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A	Draft	28/07/2020	Amy Williams Schwartz Ecologist	Alex Wilson MCIEEM Principal Ecologist	Alex Wilson MCIEEM Principal Ecologist
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The evidence which we have prepared and provided is true and has been prepared and provided in accordance with the guidance of The Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

SUMMARY

Purpose	- Wildwood Ecology was commissioned by Fay Thomas (the client) to undertake a Preliminary Ecological Appraisal (PEA) of Land at Brondeg. - The site is the subject of a planning application for construction of a single residential dwelling on the site.
Work undertaken	A PEA was undertaken consisting of a desk study and field survey undertaken in July 2020 following the Chartered Institute of Ecology and Environmental Management (CIEEM) Preliminary Ecological Appraisal (2013) guidelines and standard Phase 1 Habitat Survey protocol (JNCC, 2010).
Key issues	- The development may result in impacts on wildlife and habitats affecting the following protected species: - Bats - Great crested newts - Reptiles - Nesting birds - Hedgehogs - Otter - Badger - Invertebrates
Recommendations	A range of recommendations are provided to mitigate and compensate for the proposals impacts on a range of species, as well as provision of enhancement measures in line with current policy and legislation.
Conclusions	- Providing that the recommendations outlined within this report are successfully implemented, it should be possible for the proposed development to proceed and for there to be no long-term impacts upon the key protected species present at the site. - This ecological report will remain valid for a period of 18 months from the date of the last survey – i.e. until January 2022.

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1 INTRODUCTION

- 1.1 Wildwood Ecology was commissioned by Fay Thomas (the client) to undertake a Preliminary Ecological Appraisal (PEA) of Land at Brondeg (the site) centred at grid reference SO 03846 06225.

Site description

- 1.2 The aerial image of the site (Figure 1) shows the site to consist of an area of hard standing to the north, and a mixture of poor semi-improved grassland and tall ruderal. The edge of the site consists predominantly of dense scrub and scattered trees.



Figure 1 – Aerial image of the site (red line shows the site boundary). Image used under licence (©2020 Google). Imagery date 25/06/2018.

- 1.3 The distant aerial image of the site (Figure 2) shows the immediate surrounding area to consist of a residential area to the north and west of the site and associated infrastructure, and an area of woodland with clearings to the south and east. Further to the north-west, north-east, and east are retail parks, and the dual carriageway A470 runs to the east of the site.



Figure 2 – Distant aerial image of the site and surrounding area (red line shows the site boundary). Image used under licence (©2020 Google). Imagery date 25/06/2018.

Proposed development

- 1.4 The site is the subject of a planning application for the construction of a single residential dwelling on the site.

Purpose of this report

- 1.5 The purpose of this report is to provide sufficient information for the local planning authority to fully assess the potential ecological impacts of the proposed development, or to identify what further information is required before a full assessment can be made.
- 1.6 The result of the PEA has been used to inform whether further surveys are required, or to establish the need for, and extent of, any mitigation or compensation measures required as part of the proposed development.

2 METHODOLOGY

Desk study

- 2.1 A biodiversity desk study was undertaken in relation to the site in July 2020 (LRC reference number 0201-210). The sources consulted and the type of information obtained are summarised in Table 1.

Table 1 – Sources of biodiversity and ecological records.

Source	Information requested (search buffer from site centre/boundary)
South East Wales Biodiversity Records Centre (SEWBReC)	- Protected and priority species (2km) - Sites of local importance/designation (1km)
Multi-Agency Geographic Information for the Countryside (MAGIC) ¹	- International statutory designations (5km) - National statutory designations (2km)

- 2.2 The search buffers are considered to be sufficient to cover the potential zone of influence (Zol²) of the proposed development.
- 2.3 The impact of the proposed development on the biological integrity of any nearby designated protected sites has been fully considered.
- 2.4 No previous survey information was available for the site itself.

Field survey

- 2.5 A field survey was undertaken on the 6th July 2020.
- 2.6 All habitats present within the site with the potential to support rare, protected, or otherwise notable species of flora or fauna (together with any direct signs) were noted.
- 2.7 In the context of this report, rare, protected, or otherwise notable species of flora or fauna were those considered to meet any of the following criteria:
- Species protected by UK or European legislation (see Appendix V);
 - UK Post 2010 UK Biodiversity Framework priority species or Local Biodiversity Action Plan (LBAP) species;
 - Nationally rare or nationally scarce species;
 - Species of Conservation Concern (e.g. JNCC Red List, RSPB/BTO Red or Amber Lists).
- 2.8 A PEA habitat map was drawn up incorporating target notes used to highlight features of particular ecological interest (see Appendix I).
- 2.9 The Wildlife and Countryside Act (1981) as amended, makes it an offence to release or allow to escape into the wild any animal, plant or micro-organism not ordinarily resident in the UK (as listed in Schedule 9 of the Act). Plant species listed in Schedule 9 were searched for during the survey. Examples include species such as Japanese knotweed (*Fallopia japonica*) and Himalayan balsam (*Impatiens glandulifera*).

¹ <http://magic.defra.gov.uk/MagicMap.aspx>

² Zol definition – ‘the areas/resources that may be affected by the biophysical changes caused by activities associated with a project’ (CIEEM, 2016).

Surveyor information

2.10 The PEA was undertaken by Emma Douglas. See Table 2 for further information.

Table 2 – Surveyor information.

Surveyor	Licences	Ecological experience
Emma Douglas	-	Holds a HNC in Field Ecology. Over six years experience as both a volunteer and independent contractor carrying out bat and reptile surveys. Along with experience gained through professional training in Preliminary Ecological Appraisals, surveying great crested newts, sand lizards, otters and small mammals including dormice.

Limitations and assumptions

- 2.11 The desk study and field survey will not produce a comprehensive list of plants and animals as this will be limited by factors that influence their presence (e.g. activity and dormancy periods). An assessment can however be made of the habitats within the survey area, their nature conservation value and potential to support protected or priority species.
- 2.12 No other limitations were encountered, or assumptions made during either the desk study or the field survey and it is considered that with the access gained and recording undertaken an accurate assessment of the site's ecological value has been made.

3 RESULTS

Desk study

Designated sites (statutory)

3.1 There were no international statutory designations within 5km of the site and 2 national statutory designations within 2km (see Table 3).

Designated sites (non-statutory)

3.2 There were 5 local non-statutory designations within 1km of the site (see Table 3).

Table 3 – Summary of designated sites in range of the site.

Site name	Designation	Description / key reason for designation	Distance & direction
Cwm Glo a Glyndyrys (Cwm Glo)	SSSI, SINC	International significance for grassland fungi. Extensive areas of marshy grassland, species rich neutral grassland and acid grassland alongside woodland and heath. The area supports species including marsh fritillary butterfly, great crested newt, big blue pinkgill, and olive earthtongue.	<0.1km SW
Cwm Taf Fechan	SSSI, SINC	Limestone woodlands, species-rich calcareous grasslands, species-rich neutral grasslands and calcareous scrub. The river itself supports otters and a range of native fish species including salmon.	0.6km N
Cwm Taf Fields & Cefn Coed Tip	SINC	Fields containing areas of semi-natural woodland and a re-vegetated limestone slag tip as well as smaller areas of semi-improved acid grassland, scrub, bracken slopes and dry heathland.	0.6km N
Rhydycar West	SINC	Extensive mosaic of semi-upland and low-land habitats, which are partly contained within a conifer plantation. Main components are ancient semi-natural woodland fragments, other semi-natural woodlands, wet heathland, dry heathland, marshy grassland and semi-improved neutral grasslands. Great crested newts have been recorded in small pools on site, and noctule and pipistrelle bats have been recorded.	0.9km S
Cwm Taf Fawr	SINC	Section of major river tributary of the Afon Taf. Includes adjacent woodlands, including limestone gorge woodland with a rich ground flora. The site also includes adjacent areas of species-rich calcareous, neutral, and acid grasslands. The river itself supports otter and a range of native fish species.	1.0km N

Priority and protected species

3.3 Table 4 summarises the priority and protected species records found within the local area within the last 10 years.

Table 4 – Priority and protected species records found in the vicinity of the site within the last 10 years.

Protected & priority		# of records (# species)			Further information (from site)
Groups	Species	Onsite	<500m	>500m	
Bats	Common pipistrelle	-	-	37	Closest record: 0.8km SW for a commuting record. Closest roost record: 1.2km NE.
	Soprano pipistrelle	-	-	24	Closest record: 0.8km E for a field record. Closest roost record: 1.3km E.
	Unidentified pipistrelle	-	-	37	Closest record: 0.7km N for a field record. Closest roost record: 1.3km E.
	Brown long-eared bat	-	-	4	Closest record: 0.8km E for a field record.
	Unidentified long-eared bat	-	-	1	Closest record: 1.3km E for a roost record.
	Noctule	-	-	2	Closest record: 1.2km NE for a foraging/commuting record.
	Serotine	-	-	1	Closest record: 2.2km NE for a foraging/commuting record.
	Lesser horseshoe bat	-	-	5	Closest record: 1.7km NW for a field record. Closest roost record: 1.8km NW.
	Natterer's bat	-	-	9	Closest record: 1.3km N for a foraging/commuting record. Closest roost record: 1.9km NW.
	Daubenton's bat	-	-	9	Closest record: 1.3km N for a tree roost record.
	Unidentified <i>Myotis</i>	-	-	20	Closest record: 1.3km N for a tree roost record.
	Unidentified bat	-	-	12	Closest record: 1.3km E for a roost record.
	TOTALS	-	-	161 (8+)	
Mammals (excluding bats)	European otter	-	-	4	Closest record: 1.8km NW for a spraint record.
	European badger	-	-	2	Closest record: 1.8km NW for a record of a sett.
	West European hedgehog	-	-	13	Closest record: 0.6km NW for a roadkill record.

Protected & priority		# of records (# species)			Further information (from site)
Groups	Species	Onsite	<500m	>500m	
	<i>TOTALS</i>	-	-	19(3)	
Amphibians	Common toad	-	-	5	Closest record: 1.4km NE for a record of 'dozens' of juveniles.
	Common frog	-	-	5	Closest record: 1.4km NE for a spawn record.
	Great crested newt	-	-	4	Closest record: 0.9km SW for a field record of an adult female.
	Palmate newt	-	-	3	Closest record: 1.8km SW for a group of breeding adults.
	<i>TOTALS</i>	-	-	17 (4)	
Reptile	Common lizard	-	-	1	Closest record: 2.6km NW for a field record.
	Slow worm	-	-	2	Closest record: 1.3km NW for a field record of an adult.
	<i>TOTALS</i>	-	-	3 (2)	
Birds	Schedule 1	-	1 (1)	41 (10)	Closest record: peregrine 0.4km NW. Other Schedule 1 bird records include: barn owl, common crossbill, fieldfare, goshawk, hen harrier, hobby, kingfisher, red kite, and redwing.
	Non-schedule 1	-	1 (1)	126 (20)	Closest record: starling 0.4km NW. Other bird records include: black-headed gull, bullfinch, cuckoo, dunnoek, grasshopper warbler, herring gull, house sparrow, kestrel, lesser redpoll, linnet, nightjar, reed bunting, skylark, song thrush, tree pipit, willow tit, and wood warbler.
Invertebrates	Totals:	-	1 (1)	54 (26)	Closest record: small phoenix 0.4km NE. Other invertebrate records include: blood-vein, brindled beauty, broom moth, buff ermine, cinnabar, dark brocade, dark-barred twin-spot carpet, dingy skipper, dusky brocade, garden tiger, goat moth, grass rivulet,

Protected & priority		# of records (# species)			Further information (from site)
Groups	Species	Onsite	<500m	>500m	
					grayling, knot grass, latticed heath, marsh fritillary, narrow-bordered bee hawk-moth, red-shanked carder bee, shaded broad-bar, shimmering ruby-tail, shoulder-striped wainscot, small heath, small square-spot, wall, and white ermine.
Plants	see further info	-	1 (1)	12 (3)	Closest record: bluebell 0.4km W. Other plant records include: lesser butterfly-orchid and stag's-horn clubmoss.

Field survey

Timing and conditions

3.4 Prevailing weather conditions during the field survey are summarised within Table 5.

Table 5 – Summary of weather conditions during the PEA.

Date	Weather conditions			
	Temp [°C]	Cloud cover [Oktas]	Wind speed [Beaufort scale]	Rain
06/07/2020	15	5	1/2	Drizzle prior to survey.

- 3.5 The distribution and extent of habitats observed within the site is illustrated in the PEA plan (see Appendix I). An accompanying species list (including scientific names) can be found in Appendix IV.
- 3.6 The habitats present onsite are described in detail in Table 6 using the standard Phase 1 survey habitat classification hierarchical alphanumeric reference codes (JNCC, 2010).
- 3.7 Please also refer to Table 6 for a list and description of the onsite target notes. The positions for these target notes are highlighted in the PEA plan in Appendix I.
- 3.8 The site was classified according to the following habitat types: scrub (dense/continuous), poor semi-improved grassland, tall ruderal, and other habitat (hard standing).

Table 6 – Habitats and linear features present onsite.

Habitat type / Linear feature	Species present	Other observations
<i>A2.1 Scrub (dense/continuous)</i> Scrub is present around the boundary of the site.	Hazel, hawthorn, honeysuckle, privet, bramble, elder	
<i>A3.1 Broad-leaved, parkland and scattered trees</i> Scattered trees are present around the boundary of the site.	Oak, holly, hazel	At least one tree on the boundary of the site (oak) has potential roost features for bats.
<i>B6 Poor semi-improved grassland</i> The eastern side of the site consists mainly of broad leaved willowherb and mixed grasses.	Broad leaved willowherb, foxglove, hedge woundwort, dock, thistle, ragwort, selfheal, creeping buttercup, false oat-grass, soft rush, clover, hawkweed, bindweed, bird's-foot trefoil, wild carrot, fever few, cow parsley, Yorkshire fog, cock's foot, St John's wort, dandelion, nettle, sycamore.	Habitat piles (brash) are present within the grassland area.
<i>C3.1 Tall ruderal</i> Area of tall ruderal to the west of the site, consisting predominantly of rosebay willowherb.	Rosebay willowherb, common nettle	
<i>J5 Other habitat</i> An area of hard standing to the north of the site.		

4 INTERPRETATION AND ASSESSMENT

- 4.1 The proposed development will require displacement of onsite habitats and disturbance to their associated features. This section concerns an assessment of ecological impacts resulting from the proposed development.
- 4.2 The following interpretation and assessment is provided to ensure full compliance with both UK and European legislation and both local and national planning policy (see Appendix V).

Designated sites

- 4.3 There were both statutory and non-statutory designated sites identified within the vicinity of the site (see Table 4). The closest statutory and non-statutory site was <0.1km south-west of the site (Cwm Glo a Glyndyrys (Cwm Glo); SSSI, SINC).
- 4.4 This SSSI/SINC is buffered from the site by over 100m of scrub and woodland (offsite) and given the scale of the proposed development, and the lack of likely impacts beyond the site boundary, nearby designated sites are sufficiently well separated so that no impacts on their designated features are anticipated as a result of the works.

Priority and protected habitats

- 4.5 There were no priority habitats (as listed in Section 7 of the Environment (Wales) Act 2016) present onsite.

Priority and protected species

- 4.6 The following priority species (as listed in Section 7 of the Environment (Wales) Act 2016; or that are protected under UK legislation) were present or likely to be present onsite:

Bats

- 4.7 The local records search returned a number of records for bat species in the vicinity of the site (see Table 5) – the closest record was 0.7km north of the site for a field record of an unidentified pipistrelle, and the closest roost record was 1.2km north-east of the site for common pipistrelle.
- 4.8 There is currently no lighting installed on the site itself, but there is light spill from nearby residential properties and other developments (Figure 3).
- 4.9 There are records of light-sensitive bat species in the area (Table 4), including brown long-eared bat, lesser horseshoe bat, Natterer's bat, and Daubenton's bat.

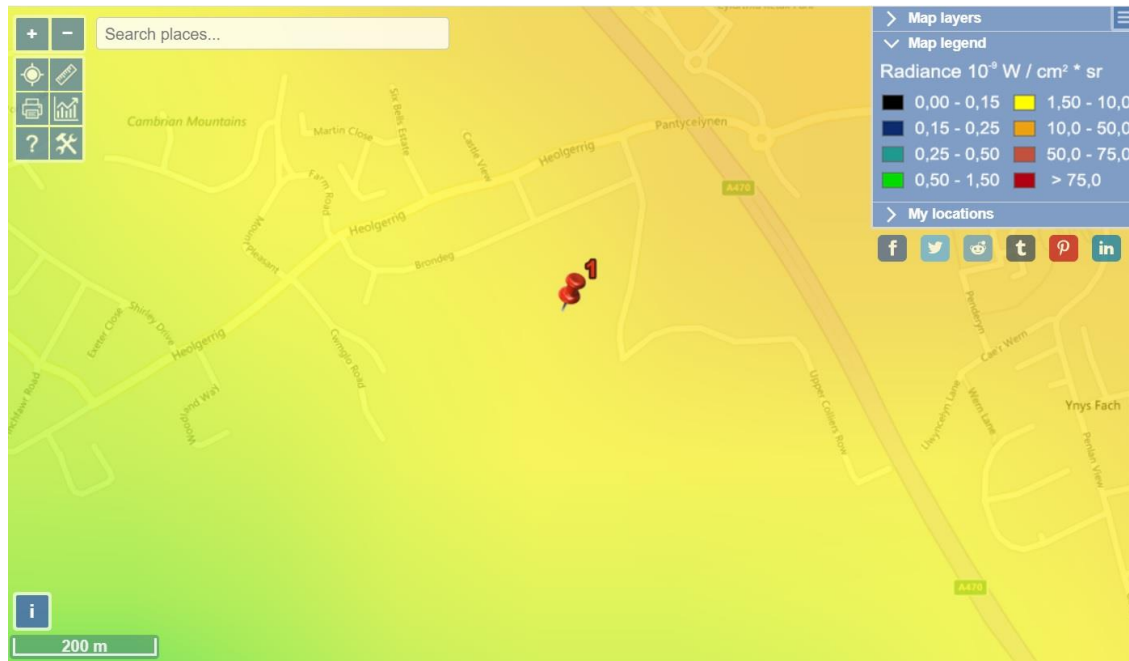


Figure 3 - Radiance level at the site (red pin marked "1") are currently at $12.21 \times 10^{-9} \text{ cm}^2 \times \text{sr}$. www.lightpollutionmap.info accessed 27/07/2020. Blue = low levels; green-yellow = moderate; orange/red = high levels.

- 4.10 The current site plans (Figure 5) do not include the removal of any trees with bat roost features. There could however be a negative impact on bats as a result of the proposed development due to an increase in light which could disrupt foraging/commuting routes.
- 4.11 There may be a negative impact on bat species as a result of the proposed development due to an increase in light levels.

Common dormouse

- 4.12 The local records search did not return any records for common dormouse in the vicinity of the site (see Table 5). This may be a result of under-recording, though there have been surveys within Cwm Glo SSSI in the past (within and referred to within David Clements, 2006) which have not found any presence in this area.
- 4.13 Although there is some scrub and trees suitable for dormice (including favoured plants such as hazel, bramble, and honeysuckle), there are no of records of dormice in the area. In addition, there is only a limited amount of vegetation suitable for dormice being removed from the site.
- 4.14 There is unlikely to be a negative impact on common dormouse as a result of the proposed development due to only very limited removal of vegetation that would be suitable for dormice.

European otter

- 4.15 The local records search returned a number of records for European otter in the vicinity of the site (see Table 5) – the closest record is a spraint record 1.8km to the north-west of the site on the River Taff.
- 4.16 There is no running or standing water present on site to provide foraging opportunities for otters, although there is a stream <200m to the south of the site. Although some of the scrub on site would be potentially suitable for otters to lay up, there is ample other habitat in the surrounding area, and only a very limited amount of scrub will be removed from the site.

- 4.17 There is unlikely to be a negative impact on European otter as a result of the proposed development due to the lack of foraging opportunities for otters on site, and more suitable areas for laying-up in adjacent habitat closer to the river.

Great crested newt

- 4.18 The local records search returned a number of records for great crested newt in the vicinity of the site (see Table 5) – the closest record was a field record of an adult female 0.9km south-west of the site.
- 4.19 The site has habitat suitable for great crested newts to forage, rest, and hibernate as there is tall ruderal, uncut poor semi-improved grassland, dense scrub, and habitat piles. Although there is no standing water on site, there are ponds suitable for breeding close to the site, with Cwm Glo SSSI being a confirmed area for this species.
- 4.20 There is a pond <300m to the south-west of the site, and another 300m to the east of the site; the pond to the south-west has an uninterrupted corridor of woodland habitat running between the pond and the site. However, the pond to the east is separated from the site by a series of roads, which may provide a barrier to great crested newt passage between the pond and the site.
- 4.21 There may be a negative impact on great crested newt as a result of the proposed development, in the absence of mitigation, through impacts on terrestrial phase animals..

Reptiles

- 4.22 The local records search returned a number of records for reptile species in the vicinity of the site (see Table 5) – the closest record was a field record of an adult slow worm 1.3km to the north-west of the site.
- 4.23 The areas of tall ruderal and poor semi-improved grassland on site are suitable for reptiles, and there are habitat piles present that are suitable for hibernation use.
- 4.24 There may be a negative impact on reptile species as a result of the proposed development due to the risk of killing/injury during vegetation clearance and construction, and by loss of habitat.

Nesting birds

- 4.25 The local records search returned a number of records for nesting bird species in the vicinity of the site, including some Schedule 1 designated species (see Table 5) – the closest bird records were 0.4km to the north-west of the site, for peregrine and starling.
- 4.26 There were several Schedule 1 designated species recorded in the vicinity of the site, including barn owl, common crossbill, fieldfare, goshawk, hen harrier, hobby, kingfisher, peregrine, red kite, and redwing, but it is unlikely that any of these species would nest on site due to lack of suitable nesting sites.
- 4.27 Other bird species recorded in the area including bullfinch, dunnock, and song thrush could potentially use areas scrub and trees that are present on site to nest in.
- 4.28 There may be a negative impact on nesting bird species as a result of the proposed development due to loss of potential nesting sites if scrub and trees are to be removed.

European badger

- 4.29 The local records search returned a number of records for European badger in the vicinity of the site (see Table 5) – the closest record was a sett 1.8km north-west of the site.
- 4.30 There were no signs (setts, latrines, snuffle holes, hairs, scent or tracks) of badger presence observed on site, but there is abundant woodland habitat to the south of the site, and so it is therefore possible that badgers may occasionally enter the site during commuting or foraging.
- 4.31 There is unlikely to be a negative impact on European badger populations as a result of the proposed development due to the lack of signs of badger presence on site, and the removal of only a small amount of a larger area of habitat for the development. There may be impacts on badgers during construction if any animals cross the site and become entrapped or injured.

West European hedgehog

- 4.32 The local records search returned a number of records for west European hedgehog species in the vicinity of the site (see Table 5) – the closest record was for a roadkill animal 0.6km to the north-west of the site.
- 4.33 Areas of scrub and habitat piles present on the site are suitable for hedgehogs to rest and/or hibernate in, and there is also habitat suitable for hedgehogs to forage in – although only a limited amount of vegetation will be removed for the development, there will be a risk of killing/injury of hedgehogs during vegetation clearance and construction.
- 4.34 There may be a negative impact on west European hedgehog as a result of the proposed development due to the risk of killing/injury during clearance and construction. There will be continued boundary vegetation retained and so there is unlikely to be any impacts on population dispersal or foraging.

Invertebrates

- 4.35 The local records search returned a number of records for invertebrate species in the vicinity of the site (see Table 5) – the closest record was for a small phoenix moth 0.4km to the north-east of the site.
- 4.36 There were no devils bit scabious or violets noted onsite (foodplants of marsh fritillary and pearl-bordered fritillaries respectively, amongst others), though bird's foot trefoil was noted onsite which is supportive of species such as dingy skipper and several blue butterflies.
- 4.37 Although some vegetation will be removed during the construction process, there is other suitable habitat for invertebrates in the surrounding area, and there will be areas of suitable species retained/replanted onsite, with the result that there should not be a negative population-level effect on any invertebrates present.
- 4.38 There is unlikely to be a negative long-term impact on invertebrate species as a result of the proposed development.

Other species

- 4.39 There are records for plants in the vicinity of the site, with the adjacent Cwm Glo SSSI having grassland fungi listed as part of the designation.
- 4.40 The site was not found to have any priority or protected plants present and whilst not in the optimal survey season for fungi, the management of the site and habitats present do not currently support grassland fungi.

4.41 There are therefore unlikely to be any impacts on priority and protected plants or fungi.

4.42 In addition, no other species are considered to be impacted by the proposals.

Impacts of proposed development

4.43 Table 7 summarises the impacts of the proposed development on protected species that are or may be present onsite.

Table 7 – Indicative potential impacts of the proposed development affecting onsite protected species.

Species	Negative impact* (plus scale and nature of impact)
Bats	Possible negative impact due to the presence of light-sensitive species in the area and the potential for an increase in light levels.
Common dormouse	Unlikely to be a negative impact as only a limited amount of scrub is being removed and there are no records of dormice in the area.
European otter	Unlikely to be a negative impact as no water present on site, and the presence of more suitable habitat locally.
Great crested newt	Possible negative impact in terms of killing/injury during clearance and construction and loss of terrestrial habitat.
Reptiles	Possible negative impact in terms of killing/injury during clearance and construction and loss of terrestrial habitat.
Nesting birds	Possible negative impact due to loss of nesting sites if scrub/trees are to be removed.
European badger	Unlikely to be a negative impact as no signs of badger presence on site, and retention of large area of suitable habitat to the south of the site.
West European hedgehog	Possible negative impact in terms of killing/injury during clearance and construction and loss of terrestrial habitat.
Invertebrates	Unlikely to be a negative impact on the population level of invertebrates as there is suitable habitat in the immediate vicinity.

*Ultimate assessment of the scale and nature of impacts is dependent upon on final design of proposed development and exact habitats affected.

5 CONCLUSIONS AND RECOMMENDATIONS

- 5.1 Wildwood Ecology was commissioned to undertake a Preliminary Ecological Appraisal (PEA) of Land at Brondeg.
- 5.2 The site is the subject of a planning application for construction of a residential dwelling on the site.

Designated sites

- 5.3 Retaining the boundary vegetation along the southern boundary will provide an additional vegetated buffer to the nearby Cwm Glo SSSI/SINC and so it is advised that this is retained, and where possible strengthened with additional planting of native species hedgerow species, such as hazel, hawthorn, guelder rose, goat willow and mountain ash.
- 5.4 Other designated sites in the vicinity of the site (see Table 4) are sufficiently well separated so that no impacts on their designated features are anticipated as a result of the proposed development.

Protected species

- 5.5 Recommendations regarding protected species are shown in Table 8.
- 5.6 In the event that any priority or protected species are found onsite, then works will immediately cease (after making the animal safe) and Wildwood Ecology contacted for advice. This will be acted upon.

Table 8 – Recommendations.

Species	Recommendations
Bats	No further surveys required, unless any trees with bat roost potential are to be removed, then this will require a tree survey by a suitably qualified ecologist. If additional outdoor lighting is to be installed, then a lighting plan will need to be produced and implemented showing considerations in place for bats i.e. no lighting of any vegetated boundaries, trees or bat features and maintaining a dark corridor for use by nocturnal species.
Common dormouse	No further surveys required. Precautionary vegetation removal to include the removal the small amount of scrub in winter i.e. between November and February. There are no rootballs or significant litter layers suitable for use by hibernating animals.
European otter	No further surveys required. Any excavations or trenching will be covered over at the end of he working day, or provided with a means of escape for any animals which may fall within in e.g. a plank set at 30°.
Great crested newt	No further surveys required. The recommendations for great crested newts are the same for reptiles below, however if great crested newts are encountered during any stage of the construction process, work must immediately cease and Wildwood Ecology contacted.
Reptiles	No further surveys required. A two-stage cut should be implemented to prevent any accidental killing of reptiles that may be on site: All contractors to be briefed by an ecologist prior to starting works

	• Vegetation management will be undertaken with ecological supervision. • Day 1 using hand tools only (strimmers or brush cutters), cut to height of 150mm from northern edge of site towards south to encourage any reptiles to move away from area of work, and into surrounding habitat. • Day 2 again using hand tools only, cut to ground level in same southerly direction as previous day. • Vegetation to be retained at ground level until construction is complete • This approach anticipates vegetation management work to be completed during the active reptile season (in warmer weather conditions, typically March to October), though if it is to be completed in the winter months (November to February), then a one-stage cut would be appropriate as reptiles are anticipated to be hibernating within for example, litter layers, brash piles and stone piles. • As such suitable onsite habitat piles will be dismantled by hand in the active reptile season to prevent impacts on hibernating reptiles • Please see below for pond edge habitat pile enhancement for reptiles. • Once construction is complete, the grassland area to the west of the site will be allowed to grow longer around the margins with haycut type management (cuts in late summer and autumn) to a minimum sward height of 150mm
Nesting birds	Any vegetation capable of supporting nesting birds will be cleared outside of the bird nesting season. In the event that clearance work has to be undertaken during the nesting season (generally from 1 st March until 31 st August, although birds are known to nest outside of these dates in suitable conditions), a breeding bird survey will be required and must be carried out by a suitably qualified person. Any active nests identified should be protected until the young have fledged. Where a Schedule 1 species (as defined in the Wildlife and Countryside Act - http://www.jncc.gov.uk/page-3614 is involved, compensation for impacts, e.g., loss of nesting sites, should be devised and implemented.
European badger	No further surveys required. Precautionary measures as for otter.
West European hedgehog	No further surveys required. Gaps (13cm x13cm) should be left at the bases of any new on-site fences/walls to allow passage of hedgehogs across the site. In addition, cautious working (i.e. checking through habitat piles, and the use of handheld tools to remove vegetation after checking for hedgehog presence) is advised to prevent killing or injury to this species.
Invertebrates	No further surveys required. Additional planting of wildflower areas (using native seed mix) to include species such as kidney vetch and birds-foot trefoil on site will offer enhancements for invertebrates. These can be planted within the edges of the site near to the pond. Grassland to be seeded using EL1 or EM1 (please refer to nursery guidelines for sowing and management) with margins allowed to grow longer.

Biodiversity enhancement

- 5.7 Local Authorities have a duty (known as the 'Biodiversity and resilience of ecosystems duty') under the [Environment \(Wales\) Act 2016](#) to seek to maintain and *enhance* biodiversity in the exercise of their functions.

- 5.8 Where possible the existing onsite habitat will be retained to ensure that species are not adversely affected by the development. Native species of local provenance will be used for any new planting on the site to support The Action Plan for Pollinators in Wales, 2013 (<http://gov.wales/docs/desh/publications/130723pollinator-action-plan-en.pdf>).
- 5.9 Given the local area supports marsh fritillary, a garden pond with wetland edge planted with devil's bit scabious, as well as a range of species of value both aesthetically for biodiversity is advised (e.g. yellow loosestrife, purple loosestrife, marsh marigold, ragged robin, star sedge, frogbit, bog bean, water forget-me-not and soft rush). This would also support any surface water run-off measures. A habitat pile can be created to the rear of the pond to soften the edge and provide a hibernation features for reptiles.
- 5.10 Bird nesting boxes and bat roosting boxes will be incorporated within the proposed building and boundary features. A range of types should be used in order to cover a variety of species. Many designs are available and we would initially recommend the following for this site:
- 1 x integrated soffit bat box to be installed on the new property (these can be made by allowing crevices for bats to enter a section of soffit; or bought ready made e.g. https://www.wildcare.co.uk/soffit-bat-box.html?__store=wildcare)
 - 1 x 32mm hole bird box (woodcrete type for longevity) to be installed on a retained boundary tree
- 5.11 Once construction is complete an ecologist will visit site to complete a compliance check, and produce a brief note for submission to the LPA ecologist.

Overall conclusion

- 5.12 Providing that the recommendations outlined within this report are successfully implemented, it should be possible for the proposed development to proceed and for there to be no long-term impacts upon the key protected species present at the site.

This ecological report will remain valid for a period of 18 months from the date of the last survey - i.e. until January 2022. Further surveys may be required to update the site information if planning is not obtained or works do not commence within this time period.
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6 REFERENCES

- Bat Conservation Trust and the Institution of Lighting Professionals (2018) Bats and artificial lighting in the UK; *Bats and the Built Environment* series (Guidance Note 08/18), The Bat Conservation Trust, London.
- Bright, P., Morris, P., & Mitchell-Jones, A. J. (1996). The dormouse conservation handbook. English Nature.
- Collins, J. (ed.) (2016) Bat surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.
- Chartered Institute of Ecology and Environmental Management (April, 2013) Guidelines for Preliminary Ecological Appraisal. CIEEM, Winchester.
- Institute for Environmental Assessment (1995). Guidelines for Baseline Ecological Assessment. E & FN Spon, Hong Kong.
- Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey; A technique for environmental audit. Reprinted by JNCC, Peterborough.
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APPENDIX I: PEA PLAN

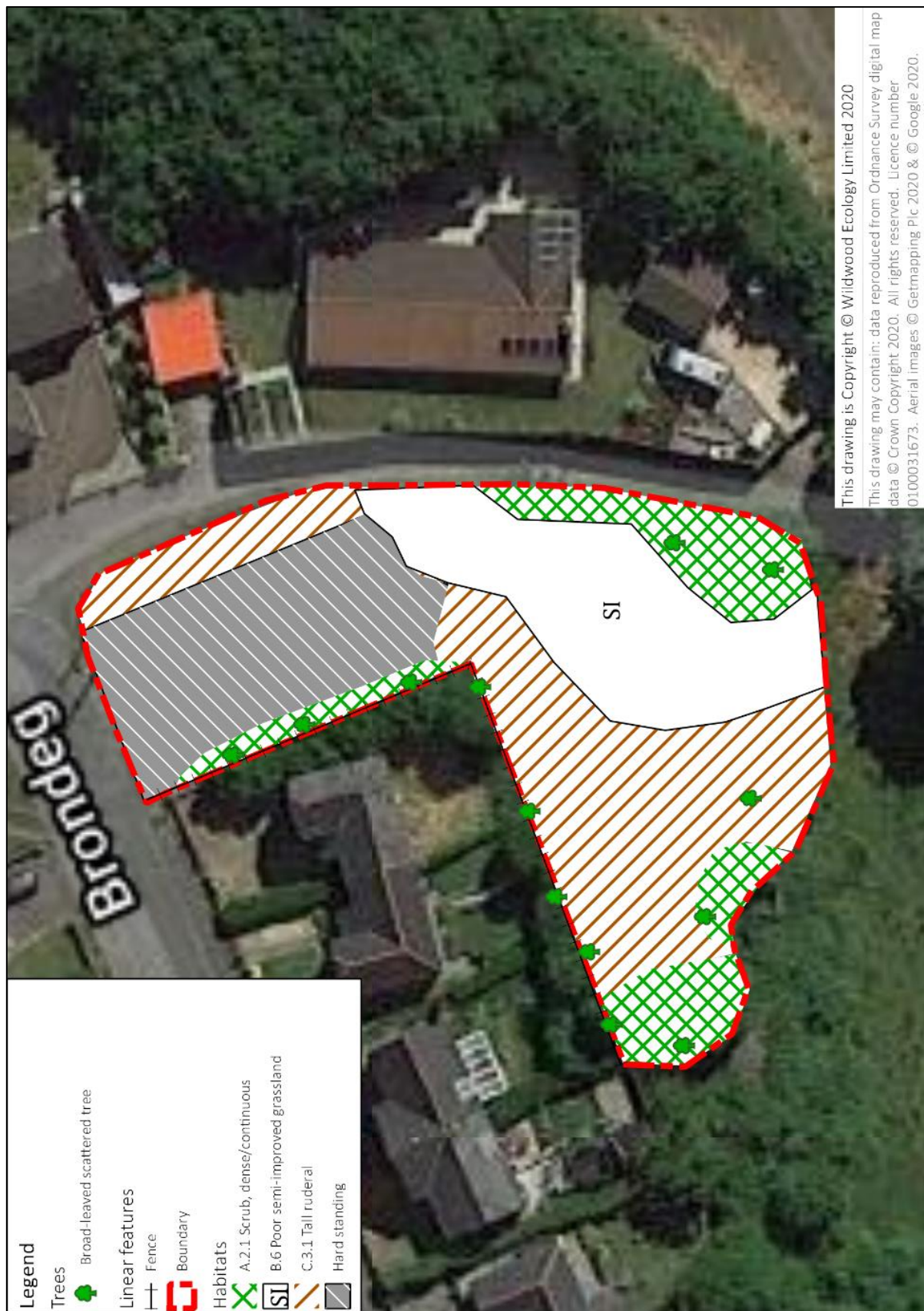


Figure 4 - PEA plan of the site.

APPENDIX II: PROPOSED DEVELOPMENT PLAN

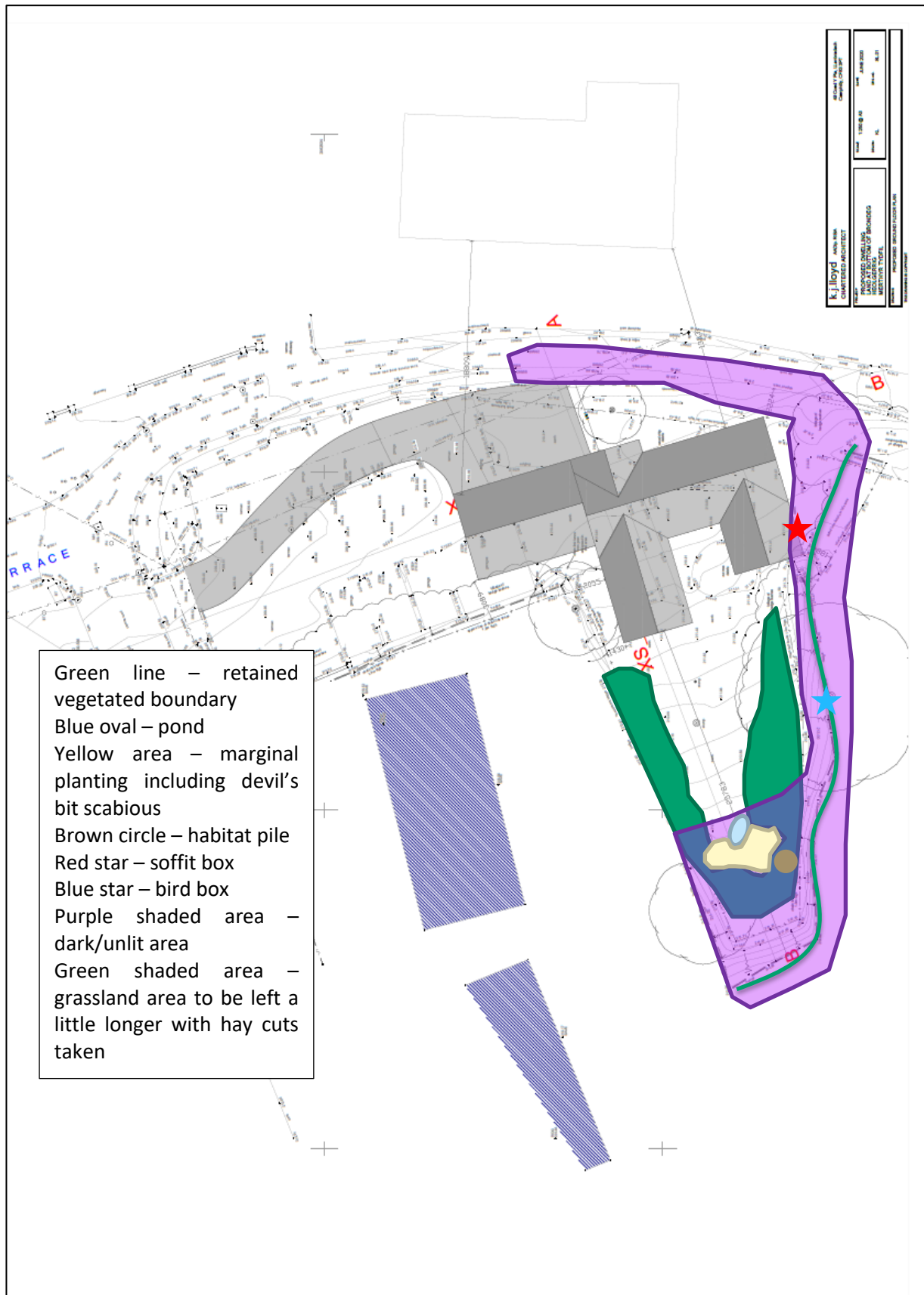


Figure 5 - Proposed site development plan.

APPENDIX III: HABITAT MANAGEMENT PLAN

In line with the requirements of the LPA ecologist, this habitat management plan will be followed for at least five years post development:

Pond

The pond will be completed and planted with yellow loosestrife, purple loosestrife, marsh marigold, ragged robin, star sedge, frogbit, bog bean, water forget-me-not and soft rush. The area of the pond will be approximately 4m² with either a puddled clay or butyl liner. The profile of the pond will follow a shallow gradient along the eastern aspect, with steeper or stepped profile on the remaining edged to allow for plantings. Plants can be placed within pond plant baskets and weighted with gravel and small stones onto shelves/sides. The frogbit and bogbean will be planted freely without the need for baskets.

The pond will be allowed to become established with vegetation (frogbit sinks over winter and rises in summer forming floating small lily pad-like leaves) dead-headed (where appropriate) in autumn. Any domination by a single species may be controlled by removing sections of growth in autumn (before frosts).

Marginal planting

This will include devil's bit scabious, soft rush and star sedge with plugs planted 5 per m². These will be planted once the pond is completed. They will be allowed to establish over two growing seasons (they may take some time to flower). Cutting back again in Autumn is advised every two years to a minimum height of 150mm.

Habitat pile

Brash and cuttings may be layered in this area as they arise in either a formal structure or more loosely. There will not be large quantities of grass cuttings without woodier brash inclusion also.

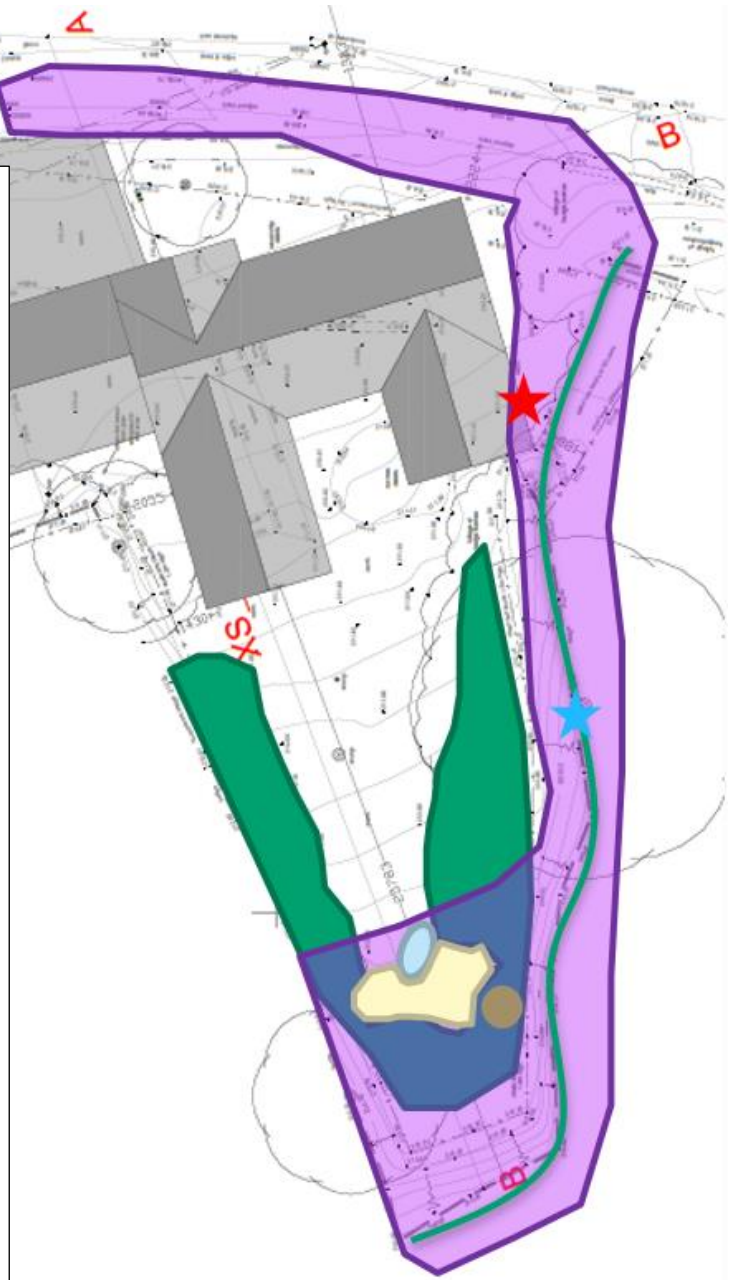
Grassland

The grassland around the edges of the garden will be allowed to grow a little longer with scope to include wildflower annuals such as poppy, corn marigold, corn cockle as well as oxeye daisy and meadow buttercup. These edges will have a hay cut taken only, in autumn each year, once all seed heads have formed and seeds allowed to drop. The arisings will be removed and either disposed of, or added to the habitat pile.

Bat and bird boxes

The soffit bat box will require no maintenance with care to ensure that the access is not impeded.

The bird box (32mm hole non-timber box) will be checked and emptied of nesting material in winter once all nesting birds have left the box.



Hedges and trees

Retained hedges and trees will be managed to promote growth and longevity. Any cuts will be taken outside of the nesting bird season (i.e. within September – February). Any features on trees suitable for use by nesting birds or roosting bats will require checks prior to any works upon them, if this becomes required as a course of maintenance.

APPENDIX IV: SURVEY IMAGES



Figure 6 – Looking south from the northern edge of the site.



Figure 7 – Looking at the northern edge of the site across the area of hard standing and tall ruderal.



Figure 8 – Mature tree with potential roost features for bats.



Figure 9 – Habitat pile with the potential for providing shelter for reptiles, amphibians, and hedgehogs.



Figure 10 – Poor semi-improved grassland in the centre of the site.



Figure 11 – Area of tall ruderal looking to the west of the site, comprised predominantly of rosebay willowherb.



Figure 12 – Area of hard standing in the north of the site, with dense scrub & scattered trees bordering a property.



Figure 13 – Poor semi-improved grassland to the east of the site.

APPENDIX V: SPECIES LIST

To be submitted to the appropriate Local Records Centre

Site Name: Land at Brondeg
Grid ref: SO 03846 06225

Provided by: Wildwood Ecology Ltd
Verified by: Amy Williams Schwartz

Common name	Scientific Name (if known)	Number	Comment
Foxglove	<i>Digitalis purpurea</i>		
Rosebay willowherb	<i>Chamaenerion angustifolium</i>		
Broad leaved willowherb	<i>Epilobium montanum</i>		
Hedge woundwort	<i>Stachys sylvatica</i>		
Broad-leaved dock	<i>Rumex obtusifolius</i>		
Thistle sp	Asteraceae		
Ragwort	<i>Jacobaea vulgaris</i>		
Selfheal	<i>Prunella vulgaris</i>		
Creeping buttercup	<i>Ranunculus repens</i>		
False oat-grass	<i>Arrhenatherum elatius</i>		
Soft rush	<i>Juncus effusus</i>		
Clover	<i>Trifolium</i> sp.		
Hawweed	<i>Hieracium</i> sp.		
Bindweed	<i>Calystegia sepium</i>		
Bird's-foot trefoil	<i>Lotus corniculatus</i>		
Wild carrot	<i>Daucus carota</i>		
Feverfew	<i>Tanacetum parthenium</i>		
Cow parsley	<i>Anthriscus sylvestris</i>		
Yorkshire fog	<i>Holcus lanatus</i>		
Cock's foot	<i>Dactylis glomerata</i>		
St. John's wort	<i>Hypericum perforatum</i>		
Dandelion	<i>Taraxacum</i> sp.		
Nettle	<i>Urtica dioica</i>		
Elder	<i>Sambucus nigra</i>		
Privet	<i>Ligustrum ovalifolium</i>		
Holly	<i>Ilex</i> sp.		
Oak	<i>Quercus</i> sp		
Hawthorn	<i>Crataegus monogyna</i>		
Bramble	<i>Rubus fruticosus</i>		
Hazel	<i>Corylus avellana</i>		
Honeysuckle	<i>Lonicera periclymenum</i>		
Sycamore	<i>Acer pseudoplatanus</i>		

APPENDIX VI: PLANNING POLICY AND LEGISLATION

The following local and national planning policy and both primary and European legislation relating to nature conservation and biodiversity status are considered of relevance to the current proposal.

Planning and biodiversity

Local Authorities have a requirement to consider biodiversity and geological conservation issues when determining planning applications under the following planning policies.

Planning Policy Wales (2018) and Technical Advice Note 5 (2009)

Planning Policy Wales (Edition 10, December 2018) sets out the land use planning policies of the Welsh Government, integrating with the Environment (Wales) Act (2016). The advice contained within Planning Policy Wales (PPW) is supplemented for some subjects by Technical Advice Notes (TANs).

TAN 5 (Welsh Government, 2009) specifically provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. The TAN provides advice for local planning authorities on the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and development affecting protected and priority habitats and species.

Under Section 2.4 within the TAN 5, 'when deciding planning applications that may affect nature conservation local planning authorities should':

- Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;
- Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;
- Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;
- Ensure that appropriate weight is attached to designated sites of international, national and local importance;
- Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;
- Ensure that the range and population of protected species is sustained;
- Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered;

Legislation and biodiversity

Certain species of animals and plants found in the wild in the UK are legally protected from being harmed or disturbed. These species are listed in the Wildlife and Countryside Act 1981 (as amended) or are named as European Protected Species (EPS) in the Conservation of Habitats and Species Regulations 2017 (as amended). These two main pieces of legislation have been consulted when writing this report and are therefore described in detail within this section.

Other relevant legislation and policy documents that have been consulted include – The Environment (Wales) Act 2016; The Countryside and Rights of Way Act 2000; The Hedgerow Regulations 1997; Biodiversity Action Plans, both UK-wide (UKBAP) and Local plans (LBAPs), and The National Planning Policy Framework (NPPF).

There is also legislation that legally protects certain animals - for example, the Protection of Badgers Act (1992) protects badgers and their setts, and the Deer Act (1991) places restrictions on actions that can be taken against deer species.

Environment (Wales) Act 2016

Section 6 of the Act places a duty on public authorities to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'. The duty replaces the section 40 duty in the Natural Environment and Rural Communities Act 2006 (NERC Act 2006), in relation to Wales, and applies to those authorities that fell within the previous duty.

Public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience.

Section 7 replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.

Wildlife & Countryside Act 1981 (as amended)

The Wildlife & Countryside Act 1981 (as amended) [WCA] is the primary legislation for England and Wales for the protection of flora, fauna and the countryside. Part I within the Act deals with the protection of wildlife.

Most European Protected Species offences are now covered under the Conservation of Habitats and Species Regulations (as amended) (see below), but some 'intentional' acts are still covered under the WCA, such as obstructing access to a bat roost.

The WCA prohibits the release to the wild of non-native animal species listed on Schedule 9 (e.g. Signal Crayfish and American Mink). It also prohibits planting in the wild of plants listed in Schedule 9 (e.g. Japanese Knotweed and Rhododendron ponticum) or otherwise deliberately causing them to grow in the wild. This is to prevent the release of invasive non-native species that could threaten our native wildlife.

The provisions relating to animals in the Act only apply to 'wild animals'; these are defined as those that are living wild or were living wild before being captured or killed. It does not apply to captive bred animals being held in captivity.

There are 'defences' provided by the WCA. These are cases where acts that would otherwise be prohibited by the legislation are permitted, such as the incidental result of a lawful operation which could not be reasonably avoided, or actions within the living areas of a dwelling house.

Licensing: certain prohibited actions under the Wildlife and Countryside Act may be undertaken under licence by the proper authority. For example, scientific study that requires capturing or disturbing protected animals can be allowed by obtaining a licence – e.g. bat surveys.

Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) (which are the principal means by which the EC Habitats Directive is transposed in England and Wales) update the legislation and consolidate all the many amendments which have been made to the Regulations since they were first made in 1994.

These regulations provide for the:

- protection of European Protected Species [EPS] (animals and plants listed in Annex IV Habitats Directive which are resident in the wild in Great Britain) including bats, dormice, great crested newts, and otters;
- designation and protection of domestic and European Sites - e.g. Site of Special Scientific Interest [SSSI] and Special Area of Conservation [SAC]; and
- adaptation of planning controls for the protection of such sites and species.

Public bodies (including the Local Planning Authority) have a duty to have regard to the requirements of the Habitats Directive in exercising their function – i.e. when determining a planning application.

There is no defence that an act was the incidental and unavoidable result of a lawful activity.

Licensing: it is possible for actions which would otherwise be an offence under the Regulations to be undertaken under licence issued by the proper authority. For example, where a European Protected Species has been identified and the development risks deliberately affecting an EPS, then a 'development licence' may be required.

Species protection

The following protected species information is relevant to this report. Legislation is only discussed in relation to planning and development; other offences may exist.

Amphibians

The common frog, common toad, common newt, and palmate newt receive limited protection under the Wildlife and Countryside Act 1981 (as amended), making it illegal to sell or trade them.

The Great Crested Newt and Natterjack Toad are fully protected under the Conservation of Habitats and Species Regulations 2017 (as amended) as European Protected Species. It is illegal to:

- Deliberately capture, injure, kill, or disturb either species,
- Intentionally or recklessly obstruct access to any structure/place used for shelter or protection, or
- Damage or destroy a breeding site or resting place.

Badger

Badgers are protected in the UK under the Protection of Badgers Act 1992. Under the act it is an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat³ a Badger, or attempt to do so;
- To intentionally or recklessly interfere with a sett⁴ (this includes disturbing Badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain; it is not intended to prevent properly authorised development.

Bats

All British bats are classed as European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017 (as amended), making it an offence *inter alia* to:

- Deliberately kill, injure or capture a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place of a bat.

In addition, all British bats are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which any bat uses for shelter or protection; or
- Disturb any bat while occupying a structure or place which it uses for that purpose.

If proposed development work is likely to destroy or disturb bats or their roosts, then a licence will need to be obtained from Natural England, which would be subject to appropriate measures to safeguard bats.

Birds

In the UK, the provisions of the Birds Directive are implemented through the Wildlife & Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2017 (as amended). All wild birds, their nests and eggs are protected it an offence to:

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any such bird whilst it is in use or being built; or
- take or destroying an egg of any such wild bird.

The law covers all species of wild birds including common, pest or opportunistic species.

Special protection against disturbance during the breeding season is also afforded to those species listed on Schedule 1 of the Act.

³ The intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence by constituting “cruel ill treatment” of a Badger

⁴ A sett is defined as “any structure or place which displays signs indicating current use by a Badger”. Advice issued by Natural England (June 2009) is that a sett is protected as long as such signs remain present, which in practice could potentially be for some time after the last actual occupation by Badger.

Dormice

The common dormouse is classed as a European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017 (as amended), making it an offence *inter alia* to:

- Deliberately capture, injure, or kill a dormouse;
- Deliberately disturb dormice;
- Damage or destroy a breeding site or resting place of a dormouse.

In addition, the dormouse is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which a dormouse uses for shelter or protection; or
- Disturb a dormouse while occupying a structure or place which it uses for that shelter or protection.

Otters

The European Otter, *Lutra lutra* is a European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2017 (as amended), making it an offence *inter alia* to:

- deliberately capture, injure or kill any wild otter;
- deliberately disturb wild otters;
- damage or destroy a breeding site or resting place of an otter.

In addition, the otter is listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- disturbs an otter while it is occupying a structure or place which it uses for shelter or protection; or
- obstructs access to such a place.

If proposed development work is likely to destroy or disturb otters or their resting places, then a licence will need to be obtained from Natural Resource Wales, which would be subject to appropriate measures to safeguard otters.

Reptiles

Adders, slow worms, grass snakes and common lizards are protected against killing and injuring under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This legislation makes it illegal to intentionally kill or injure a common reptile. As a result, reptiles must be removed from areas of development and relocated onto suitable release sites before any site works can commence.

Smooth snakes and sand lizards are European Protected Species under schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). This makes it illegal to carry out the following activities:

- Deliberately or recklessly disturb, capture or kill these animals;
- Deliberately or recklessly take or destroy eggs of these animals;
- Damage or destroy a breeding site or resting place of such a wild animal; or

Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead animal, or any part of, or anything derived from such a wild animal.