Reptile Survey and Mitigation

Parc y Delyn, Penlan Road, Carmarthen, Carmarthenshire.

July 2022

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Summary

I & G Ecological Consulting were commissioned to undertake a Reptile and Amphibian Survey on a proposed residential development site covering an area of approximately 1.2 hectares in size, with an additional 0.8 hectares (for potential mitigation measures to the immediate north), located off Penlan Road to the north of Carmarthen in the county of Carmarthenshire. (See Figure 1 for Location). The land within the site boundary consists predominantly of semi-improved neutral grassland, bracken, blackthorn and bramble scrub with isolated trees, and hedgerows. The site has **medium** potential for Reptiles and Amphibians and offers feeding and foraging ground as well as areas for hibernation.

Figure 1. Location of site Grid Ref: SN 41119 20909

Figure 2. Area surveyed (from Google maps)

1. Introduction

1.1 I & G Ecological Consulting were commissioned to undertake a Reptile and Amphibian Survey in connection with a proposed planning application to develop the site for housing.

1.2 The land within the red line site boundary (Fig. 2) comprises of semi-improved neutral grassland, hedgerow, bracken, bramble scrub with scattered trees and dense blackthorn scrub. To the north and south east of the site is farmland, with housing development to all other boundaries. A PEA was undertaken on the site by I&G Ecological Consulting Ltd in June 2020 and potential for reptile and amphibian use was identified within the report. No signs of either reptiles or amphibians were found during the PEA survey.

1.3 This Report is being produced as part of the planning application for a housing site.

1.4 This report provides a summary of the reptile survey undertaken in July 2022 and includes recommendations on any ecological constraints/opportunities associated with development at the site.

2. Regulatory & Planning Framework

2.1 All terrestrial native reptiles are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are protected under Section 9 of the Act.

2.2 Reptiles are protected (under Section 9 of the Act), against intentional killing, injury and taking. The Act also prohibits selling, offering for sale, possessing or transporting for the purpose of sale or publishing advertisement to buy or sell.

2.3 Where any works would affect Reptile and Amphibian species, appropriate mitigation measures would be required to prevent killing or injury.

2.4 The legislation covers all life stages. Eggs, juveniles and adults are covered equally by the legislation.

2.5 Under the National Planning Policy Framework (NPPF April 2012), the presence of any Protected Species (which includes Common Toad and all reptile species) are a material planning consideration. The ODPM 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System, provide additional advice and support the NPPF.

2.6 Environment (Wales) act 2016. This Act has replaced 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. It came into force in May 2016.

2.7 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'. Under Section 6 public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience.

2.8 Section 7 of the Act places a duty on public authorities to take steps to maintain and enhance biodiversity. This section replaces the duty in section 42 of the NERC Act 2006. The Section 7 Priority Species under this act is a list of the living organisms of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales. The Section 7 Priority Habitats is a list of the habitats of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales.

3. Habitat Description

3.1 The site proposed for development measures approximately an area of land of approximately 1.2 hectares in size, located off Penlan Road to the north of Carmarthen in the county of Carmarthenshire. The land within the site boundary consists predominantly of semi-improved neutral grassland, bracken, blackthorn and bramble scrub with isolated trees, and hedgerows. An area of land of approximately 0.8 hectares adjoining the development parcel to the north was also surveyed. The land has been provisionally allocated for potential mitigation measures. This land is mainly semi-improved neutral grassland with small areas of bracken, bramble and blackthorn scrub with hedgerow to the eastern and western boundaries.

In terms of the application site, the mixture of semi-improved neutral grassland, bracken, scrub and trees is of moderate ecological interest.

3.2 A site inspection in June 2022 revealed that a significant area of the development site is scrub and bracken with scattered trees and shrubs. A small area of grassland remains to the north. This is contiguous with a larger area of grassland above. Hedgerows/tree lines run to the west, north east and east.

3.3 Scrub and brash encroachment is irregularly managed.

3.4 The site possesses a number of features suitable for reptile habitation.

Within the development boundary, the areas of dense blackthorn scrub are unlikely to support reptile interest except along the margin.

The areas of bracken are again very dense with little or no ground layer. These areas are likely to provide reptile interest along the sunnier edges where they grade into grassland. Areas of dead bracken are likely to provide basking sites for slow worm and adder.

The dense bramble scrub to the southern boundary is likely to be too shaded for reptiles and too far removed from more open sites. The northern half is more open and varied, intermixed with bracken and small areas of shrubs, and in proximity to the more open neutral grassland.

The neutral grassland within the site boundary is a relatively small area, and large parts of it are rank and even structured, making it sub-optimal for reptiles. The areas grading into scrub and bracken are likely to provide the best habitat, but they are potentially present across the grassland area.

Fig. 3

3.5 Reptile Habitat Requirements

Viviparous lizards occupy a wide range of habitats, including most types of grassland (especially rough grassland with bramble scrub), woodland glades and rides and hedgerows. Intensively farmed land, dense woodland, heavily grazed or mown habitats and many urban areas are unsuitable. This is because they are structurally deficient or lacking invertebrate prey. The species avoids structurally uniform vegetation, whether it is rank and completely closed or short and completely open. Typically, the viviparous lizard differs from the other widespread lizard species, the slowworm, in preferring sites with a greater variation in the height of vegetation cover. Both humid and dry microhabitats are selected by viviparous lizards but the highest densities tend to be found in damp or wet areas, especially where abundant grass tussocks are present to provide food, shelter, basking and hibernation sites. However, as long as the vegetation is located in a sunny area, is structurally diverse and provides adequate cover, viviparous lizards can attain high population densities

Slow-worms inhabit a wide range of habitats, including most types of grassland (especially rough grassland with bramble scrub), woodland glades and rides and hedgerows. As long as sufficient warmth, cover and food is available, they can be found in urban areas, for example in gardens and allotments, where they often inhabit compost heaps/bins. Slow-worms have a broader range of habitats than the other lizards, tolerating a less diverse vegetation structure and often being found on impermeable as well as free-draining soils. In all habitats, slow-worms require dense vegetation, especially grasses coupled with sunny areas to allow thermoregulation and, preferably, loose soil into which to burrow. Very wet and very dry habitats are usually avoided.

G**rass snake** is a lowland species, found widely across England and Wales. This species is often associated with wetlands, but can also be found in many other habitats such as many types of grassland, open woodlands, farmland, gardens (especially large gardens with ponds), and allotments. The grass snake requires some cover and a degree of structural diversity but, as it is more mobile than the other reptiles, it is often not reliant on a single site providing the necessary habitat for hibernation, feeding and egg-laying. Sunny areas are usually preferred, but during hot weather it is not uncommon to encounter grass snakes in woodland and other shaded habitats. Warm, humid, decomposing organic material is required for egg-laying

A**dder**s prefer lighter chalk or sandy soils, and are almost never found in habitats based solely on heavy clays. Favoured habitats include grassland with a dense sward and low scrub, clearings, rides and edges in deciduous or coniferous woodland, field edges. The adder tends not to be found in intensive agriculture or urban areas. In all suitable habitats, dry, open, sunny areas with adjacent dense ground cover are essential. Hibernation sites tend to be on south-facing slopes; tree root systems, crevices in banks, and voids in piled materials are often used. Wetter areas around ponds are also used (especially in the summer) providing there are dry banks or grass tussocks for basking.

4. Survey Methodology

4.1 **The impact of the proposed development is considered to be medium as it constitutes habitat destruction and removal as well as the potential for direct killing, therefore a Presence/absence survey, together with a Population Size Class estimate was considered the most appropriate and effective survey.** This survey methodology has been based on the Natural England Technical Information Note TIN102 - Reptile Mitigation Guidelines (2011). A Presence/Absence survey being the initial approach, together with a Population Size Class Assessment.

4.2 Direct Observation Survey (DOS), existing refuge survey, and Artificial refuge survey (ARS) were carried out during each visit.

4.3 DOS involved walking slowly around the site and watching for moving or basking reptiles, particularly around stone walls, debris such as fallen wood and areas of

shorter grass. Existing refuge survey was carried out by lifting items such as tiles, concrete slabs and discarded waste items.

4.4 ARS Standard methodology involved the deployment and subsequent checking of artificial refugia (0.5 x 0.5 m squares of mineral felt roofing material). A total of 30 refugia were deployed on 1st July 2022, within potentially suitable habitat.

5. Survey Results

5.1 A total of 7 visits were made during optimal conditions (suitable temperature, dry, with little or no breeze) between the 17th July and 31st July 2022.

5.2 Slow worms and lizards were seen during the Direct Observation Surveys and the Existing Refuge Surveys.

6. Mitigation Measures

6.1 As reptiles were found during the survey period, Mitigation measures are required to ensure that reptiles on site are protected during the development phase from killing, injury and capture within suitable terrestrial habitats within the site. In the absence of mitigation, reptiles could possibly be trapped within excavations and subsequently killed when they are filled, or utilise spoil piles for refuge and hibernation purposes and subsequently be injured or killed. Mitigation for loss of habitat will be covered under Enhancement at point 7.

6.2. The low population size Class (less than 5) suggests that very few reptiles may be inhabiting the site, and therefore, very few are likely to be at risk. The recommended mitigation measures will therefore proportionately reflect this.

6.3. **Habitat Manipulation - It is recommended that** a gradual and stepwise reduction in potential reptile habitat to commence before site works start in order to encourage natural reptile dispersion from the site. Removal of any artificial refugia will go some way to reducing site potential.

6.4. **An area has been identified for retention as a Reptile Mitigation & Receptor Area (Fig. 4). Before the site clearance commences, this area will be made known to all operatives and marked as such on the ground (cordoned off with Heras Fencing or similar barrier which is still permeable to reptiles). Any piles of debris or scrub in this area should be retained as habitat.**

6.5. Firstly, all potential reptile refugia currently on site are to be carefully removed by hand e.g. brash piles, discarded materials/rubbish etc

6.6. All potential refugia must be removed, and grassland reduced to ground level, prior to commencement of any demolition or ground works (including investigative bore holes).

6.7. Once removal of refugia and reduction of grassland is complete, and prior to construction works commencing, a suitably qualified ecologist must visit the site in order to check that the habitat manipulation has been undertaken satisfactorily**.**

6.8. A destructive search of the site, in the presence of an ecologist, will then be undertaken. The first few centimeters of undisturbed areas of ground will be scraped up with the ecologist present to rescue any individual reptiles found. This will be undertaken during periods of warm and dry weather (when reptiles are likely to be active).

6.9. A toolbox talk will be provided to all construction workers.

6.10. Any reptile found during the works shall be carefully relocated to suitable habitat retained within the site utilising suitable container and suitably experienced personnel. The container will comprise good ventilation, a secure lid and plenty of dry bulky vegetation such as hay. Best practice methods will be used as outlined within the Herpetofauna Workers Manual (JNCC, 2003).

6.11. In the unlikely event that Great Crested newt (*Triturus cristatus*) are found or suspected, all works will stop immediately, and the acting ecologist contacted for advice.

An artificial hibernaculum will be created in the receptor site prior to commencement of clearance. See Fig. 4 and Appendix 2 for further details.

6.12. A gradual and stepwise reduction in potential reptile habitat to commence imminently in order to encourage natural reptile dispersion from the site. (See Fig. 4 for direction of cut).

6.13. Reduction in reptile habitat must only take place between March-October, when reptiles are active. This will allow them to relocate successfully.

6.14. All potential reptile refugia, currently on site, to be carefully removed by hand (e.g. stones, brick piles, brash piles etc.)

6.15. Gradual reduction of grassland and scrub vegetation.

Cut one third of the area at a time, as follows:

- Reduce (using handheld machinery) height of vegetation to 30 cm.
- Leave undisturbed for 5 days.
- Further reduce height of vegetation- to ground level.
- Repeat for each third of the grassland area.
- Maintain grassland at ground level height via regular cutting/strimming or chemical treatment.
- Always remove all cuttings (‘arisings’) from the site - to prevent them becoming reptile refugia.

6.16. All potential refugia must be removed, and grassland reduced to ground level, prior to commencement of any demolition or ground works (including investigative bore holes).

- Woody vegetation, such as Ivy, growing at the base of walls or other features which are to be removed, should be cut by hand and carefully removed (as part of the steps taken at 4.6). Always remove all cuttings ('arisings') from the site - to prevent them becoming reptile refugia.

- Piles of stone, bricks and other material should be dismantled by hand, and removed from site, and an amount retained in bags/container for use in artificial hibernaculum creation.

6.17. Once removal of refugia and reduction of vegetation is complete, and prior to construction works commencing, the Receptor Area will be protected by Reptile Exclusion Fencing (Fig 4).

6.18. A suitably qualified ecologist must then visit the site in order to establish whether the mitigation was successful, and that no reptiles will be at risk from the subsequent construction works.

6.19. If the ecologist is dissatisfied, further mitigation methods will be enforced before construction can commence. Such methods may include erection of further temporary exclusion fencing and use of artificial refugia to clear the site of potential resident reptiles; sufficient refugia scattered over site are left for a period of 2 weeks before being checked by Ecologist with any animals removed to receptor site (as 4.13), and the refugia checked daily until 3 clear days with no animals found.

6.20. A destructive search of the site, in the presence of an ecologist, will then be undertaken. The first few centimeters of undisturbed areas of ground will be scraped up, with the ecologist present to rescue any individual reptiles found. This will be undertaken during periods of warm and dry weather (when reptiles are likely to be active).

Fig. 4. Plan of Three-phased directional vegetation clearance and reptile receptor area

6.21. Reptile habitat:

The area on the Plan (see Fig.4) is to be set aside for reptiles. The site requires some modification and periodic maintenance to act as a suitable reptile receptor area during construction phase and it should continue to function as such during operational phase.

The aim is to create a mix of vegetation heights and a variety of substrates including grassland and bare ground, to provide feeding, shelter and hibernation opportunities.

The following points should be followed:

- Before any work starts on site, the designated receptor area should be marked out with suitable hi-vis tape or similar so that the area is not disturbed or inadvertently cleared.
- The hibernaculum should be built as per Appendix 2 on a slight slope with a sunny aspect, where possible.
- Any vegetation around the hibernaculum should be left (creating a 2m buffer which remains undisturbed).
- Any grassland areas should be left intact, and not tracked over or otherwise disturbed.
- An amount of Bramble scrub should be left to develop, perhaps up to 30%, which will provide shelter and shade; however, if significant amounts of scrub cover are allowed to develop, this will create too much shade and will eventually become a homogenous area lacking the structural diversity that reptiles require.

6.22. In the unlikely event that Great Crested newt (*Triturus cristatus*) are found or suspected, all works will stop immediately, and the acting ecologist contacted for advice.

6.23. Post-development enhancement measures for the site will include:

- Creation of reptile and amphibian refugia and hibernacula – log, rock and turf pile (See Fig. 4 for location and Appendix 2 for details of construction).

- A 2m buffer zone around hibernacula of unmanaged vegetation.

6.24. Management of the retained receptor area will consist of periodic reduction in scrub and grassland/other vegetation to retain a mosaic of micro-habitats, e.g. bare areas, low vegetation, dense cover (suggest every 2-5yrs). Arisings can be left in piles within the receptor area to create further habitat. The timing of such works must take into consideration nesting birds and hibernating reptiles, therefore should ideally be undertaken between August and September.

7. Enhancement

7.1 Post-construction enhancement measures for the site will include:

- Creation of reptile and amphibian refugia and hibernacula – log, rock and turf pile (See Appendix 2).

- A buffer zone around the site of unmanaged grassland and suitable amphibian and reptile refugia and hibernacula.

- Suitable "open" type fencing such as chain-link or close-board but with gap underneath which will allow free-movement of reptiles and other animals between retained habitat and existing adjacent habitat and the wider environs.

8. Conclusion

8.1 **The mitigation at the site has been designed following best practice measures but will need to be finalised and agreed with LPA Ecologist**. The findings of the survey points to a **Low Population Size Class** (less than 5). The mitigation on site will be suitable for higher numbers than this. During the initial preparation and subsequent development of the site, any reptiles/amphibians found will be relocated to the retained habitat adjacent to the development site. Suitable fencing will ensure that retained habitat remains connected to adjacent land and there will be no fragmentation effects upon any displaced reptiles.

A dedicated reptile / amphibian refuge is to be created as part of the development and site enhancement and to mitigate for the loss of shelter afforded at present by some of the scrub and grassland.

9. References

Beebee, T. C, & Griffiths, R A. (2000). Amphibians and Reptiles. A Natural History of the British Herpetofauna.

Foster, J. (2011). Natural England Technical Information Note TIN102. Reptile mitigation guidelines.

Gent, Tony & Gibson, Steve. 2012. Herpetofauna Workers' Manual

Herpetofauna Groups of Britain and Ireland. Evaluating Local Mitigation/Translocation Programmes : Maintaining best practice and lawful standards.

The Conservation of Habitats and Species Regulations 2010 (as amended)

The Wildlife & Countryside Act 1981 (as amended)

The National Planning Policy Framework, 2012 (NPPF)

APPENDIX 1 Table of Survey Results

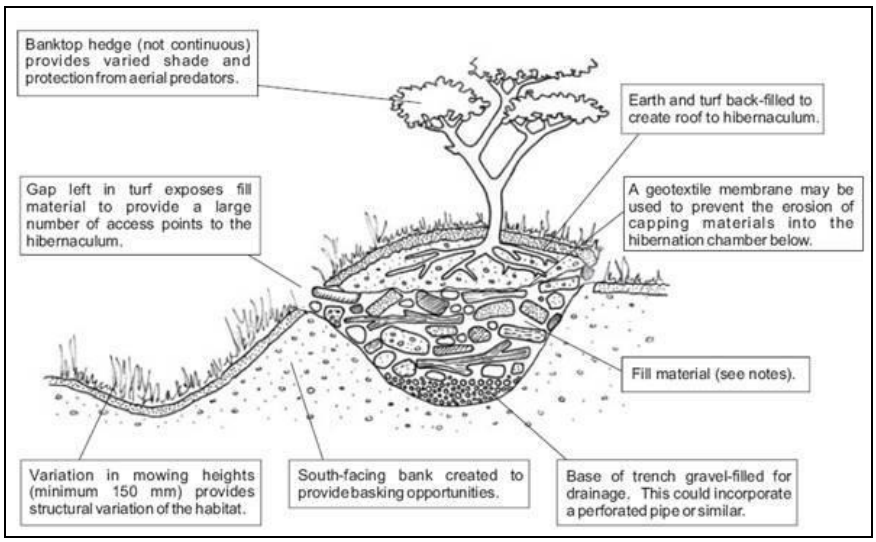
Visit Number	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Date	**17 Jul**	**19 Jul**	**21 Jul**	**25 Jul**	**27 Jul**	**29 Jul**	**31 Jul**
Conditions	25 C. Bright no breeze	22 C, Bright no breeze	21 C, Bright no breeze	19 C, Overcast no breeze	22 C, Overcast light breeze	24 C, Sunny, no breeze	21 C, Overcast, light breeze
Sheet Number							
1	Slow worm	0	0	Slow worm	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	Lizard	0	0	0	0	0
11	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0
19	0	0	0	0	0	Slow worm	0
20	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
27	0	0	0	Lizard	0	0	0
28	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0

Photo of a slow worm found on site.

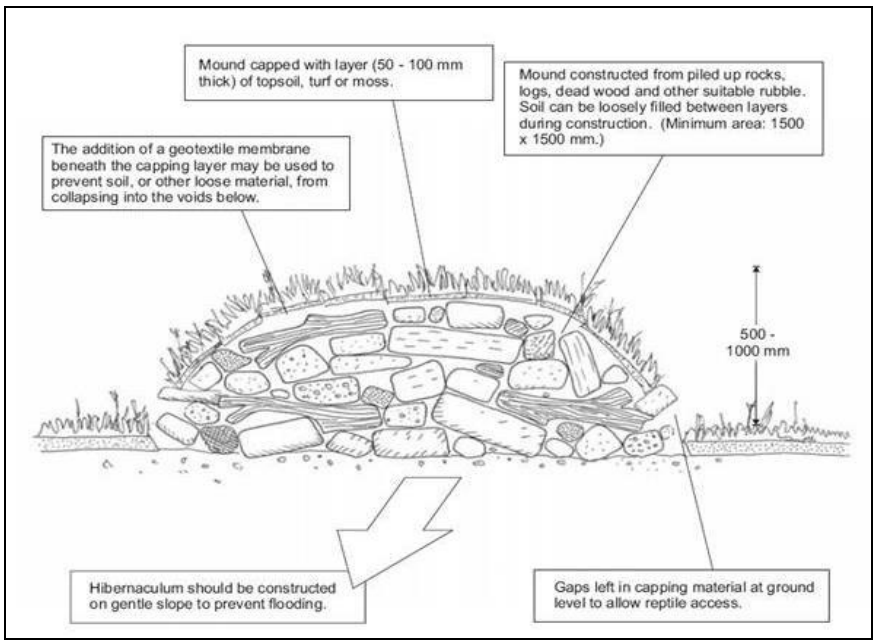
APPENDIX 2

Details of suitable hibernacula design

<u>The preferred hibernacula design where ground conditions allow</u>



<u>Impermeable / flat ground (where flooding is likely)</u>



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

Advice in this report is based on the judgement of I&G Ecological Consulting and the interpretation of data gathered during the course of their survey on the property named in this document.

The findings and advice given during the course of this survey is provided by employees of I&G Ecological Consulting acting only on behalf of I&G Ecological Consulting.

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