



**Reptile Survey
for a proposed housing development
on land adjoining Awel-y-mor,
St Dogmaels, Pembrokeshire**

Client: Obsidian Developments

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EXECUTIVE SUMMARY

1. A reptile survey was undertaken by Matt Sutton on land at St Dogmaels during spring 2022. The aim of the survey was to establish the presence or likely absence of reptiles across the site following Natural England approved guidelines (Froglife, 1999).
2. There were no previous records of reptiles from the site; the author had recorded slow-worms in a private garden in St Dogmaels, 500m to the north-west.
3. Five survey visits were undertaken, all in suitable weather conditions. During each survey visit, all twelve pre-laid artificial cover objects were examined for reptiles. In addition, a transect route was walked between these to examine other potentially suitable habitat areas for the presence of basking reptiles.
4. Two species of reptile were recorded during survey: slow worm (*Anguis fragilis*) and barred grass snake (*Natrix helvetica*) Only a single individual of the latter was recorded, but slow worms were recorded under every artificial cover object with a maximum of 19 on any one visit. A breeding population is present on the site, the size of which is classed as 'Good' according to guidelines (Froglife, 1999).
4. A mitigation strategy will be required, and the detail or scope of this should be agreed with the LPA. A method statement should be produced, for implementation prior to any works starting on site. This may specify progressive exclusion of the slow-worm population to a refuge area on site, or translocation to an off-site receptor.
5. If development does not begin within two years, then the survey may require updating to ensure that the distribution and population size of reptiles has not changed in the interim.

1. Background to the study

A Preliminary Ecological Assessment of the site was undertaken by Matt Sutton in March 2022. Although no records of reptiles were revealed by the published data search within a 2 km radius, the author had recorded slow worms in a private garden 500m to the north-west and, from the structural heterogeneity of the site and the habitat types present, it was considered that it may support numbers of common reptiles.

Wyndrush Wild was subsequently instructed by Obsidian Developments to carry out a reptile survey of the site.

The reptile surveys were undertaken by Matt Sutton between 15th April and 16th May 2022, on days with suitable weather conditions for finding reptiles (Froglife 1999).

Protected and BAP species, such as barred grass snakes, common lizards and slow worms, are a material consideration under the National Planning Policy Framework (NPPF, 2012). All reptiles are protected under Schedule 5 of the Wildlife and Countryside Act 1981.



Main open area within the site

2. Site Description

The site is situated on the south-eastern periphery of St Dogmaels. A plan of the proposed site is shown below.

The majority of the site is composed of scrub and young woodland, but there is an area of rough semi-improved grassland in the western half of the site. This has not been grazed in recent years, but may have been periodically strimmed.



Location of proposed site

3. Aims and objectives

The aims and objectives of this survey were to:

- identify the presence of any reptile species using the site
- advise of any implications their presence would have on the proposed development
- suggest appropriate mitigation methods where necessary

To undertake the reptile survey, artificial cover objects (ACOs) were used. These increase the chances of observing otherwise elusive reptiles, which are attracted to these 'refuges' as they can bask on top or regulate their body temperature below the refuges, out of sight from predators.

Twelve ACOs comprising a mixture of black Onduline (bituminous roofing sheets) and corrugated metal sheets, each measuring either around 1m², were laid on 25th March 2022. Use of a combination of materials is recommended by Sewell *et al* (2013). These were left to 'bed-in' for three weeks. Survey guidelines (Froglife, 1999) recommend a four-week bedding in period, but the deviation from this was not considered significant.

The ACOs were laid in areas of suitable habitat for reptiles, which are limited to the grassland areas in the western part of the site. Dense scrub elsewhere renders the majority of the site unsuitable and inaccessible. The map in Appendix A shows the refuge locations.

A small number of existing potential refuges (small log piles, compost heaps and scrap metal) were also identified on the site. These refuges were also surveyed on each visit to the site.

On each visit, ACOs were approached slowly and observed from a distance to observe any reptiles basking in the sun. Each sheet was then approached cautiously and turned over to survey for reptile species using the refuge to warm up or shelter underneath.

A transect route was also walked slowly, to cover the areas of open ground and potential basking spots between the ACOs.



Example of ACO

4. Results

Desk Exercise

NBN Atlas has records of slow worm from the Cardigan area, and the author has recorded them at the Welsh Wildlife Centre, Cilgerran. He has also recorded a population under slates in a terraced garden on the High Street, St Dogmaels, 500m to the north-west of the site.

Survey Results

Records from the five survey visits are summarised in Table 1.

Slow worms were recorded under ACOs on each visit. Each of the 12 ACOs held slow-worms on at least one survey visit. Males, females and juveniles were all recorded. The maximum number under one ACO on a single visit was 7. The maximum total recorded on site in a single visit was 19.

A single young barred grass snake was recorded on one visit.

No reptiles were found under natural refuges, and none were seen on transects between refuges.

Table 1: Summary of results for reptile species

Visit	Date	Weather	Adder	Grass Snake	Common Lizard	Slow Worm
1	15.4.22	13.7°C 20% cloud Beaufort 1				3 males 1 juvenile female
2	23.4.22	16°C 80% cloud Beaufort 3				11 females (including 4 juvenile) 3 males
3	29.4.22	13°C 10% cloud Beaufort 1				3 females 1 male 3 juvenile
4	8.5.22	14°C 10% cloud Beaufort 0				15 female (including 1 juvenile) 4 male
5	16.5.22	17°C 80% cloud Beaufort 1		1 juvenile		16 females 2 male



Female slow worms (left) and male with two females under metal ACO (right)

Reptile Population Assessment

Froglife (1999) provides means of evaluating reptile populations based on survey results using a density of 10 refuges per hectare. “Low”, “good” or “exceptional” populations are based on numbers of adult reptiles recorded by one surveyor in one visit (see Table 2).

Table 2: Reptile population assessment *Froglife* (1999)

Species	Low Population	Good Population	Exceptional Population
Grass snake	Less than 5	5-10	Greater than 10
Adder	Less than 5	5-10	Greater than 10
Slow worm	Less than 5	5-20	Greater than 20
Common lizard	Less than 5	5-20	Greater than 20

Figures in the table refer to the minimum number of adults seen by one surveyor in one day at a refuge density of up to 10 per hectare.

The density of refuges used during this survey (12 in approximately 500m² of suitable habitat) was well in excess of the order suggested, allowing a comparison using the table above to be made.

As a maximum daily count of 19 slow worms were recorded on a single visit during the survey, the population of slow worms using the site can be described as Good (bordering on Exceptional). The maximum count of a single barred grass snake means that the population of this species can be described as Low.

5. Discussion and Recommendations

Individual adult and juvenile slow worms were recorded under all ACOs, distributed around the grassland area in the western part of the site.

April and May are optimal survey months for reptiles. Survey visits were all carried out in suitable weather conditions, at times of day judged conducive to reptile recording (generally 9.30 – 10.30am and the recommended density of refugia (10 per 1ha of suitable habitat at the site) was exceeded. Therefore, the survey results are considered to provide an accurate account of the status of reptiles on the site.

Should the proposed development proceed, some action is thus obligatory to ensure full compliance with wildlife legislation (The Wildlife and Countryside Act 1981 (as amended). This states that it is an offence to deliberately harm or kill any reptile.

Developing a site in the knowledge that reptiles are present consequently requires a strategy to reasonably protect them. A precautionary approach will need to be taken to meet best practice, ensure observance of regulations, maintenance of the reptiles' favourable conservation status and in observance of the Biodiversity Duty.

A translocation of the current slow worm population should be considered. This approach would require identification and survey of a nearby receptor site, followed by capture and movement of slow worms to this receptor by a licenced reptile worker. This would be required before development of the car park began. Note that there are seasonal constraints because these animals hibernate and reptile search, capture and removal to safety will have to be carried out in warmer weather (spring to late summer). If no suitable off-site receptor sites are available, it may be possible to retain an area of suitable habitat for reptiles within the development. The current areas of grassland would be most suited to this. Development of grassland from dense scrub in the eastern part of the site may be feasible, but is likely to require management over a period of at least 2-3 years to achieve suitable vegetation.

Any planned mitigation strategy would require a Method Statement to be approved by an ecologist or reptile worker and subsequently implemented. The Method Statement should determine the most appropriate measures to deter reptiles from the site ahead of and during construction. This may include sequential removal of vegetation and/or reptile exclusion fencing.

6. Summary and Conclusions

A good population of slow worms is present on the site, together with a small population of barred grass snake. Development of a strategy to avoid killing or injuring them during the proposed development works will be required. Identification of a suitable area which could be managed for slow worms on or near to the site is advised.

7. References

Sutton (2022) Preliminary Ecological Appraisal, Land Adjoining Awel y Mor, St Dogmaels. Wyndrush Wild report.

Froglife (1999). Reptile survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife advice sheet 10,

Sewell D, Griffiths RA, Beebee TJC, Foster J and Wilkinson JW (2013) Survey Protocols for the British Herpetofauna. ARG / Universities of Kent and Sussex

Appendix A: Details of Artificial Refugia

	Week 1	Week 2	Week 3	Week 4	Week 5	
	15/4/22	23/4/22	29/4/22	8/5/22	16/5/22	
Start Time	9.15	13.00	9:35	9.	12.40	
Temperature	13.7	16	13	14	17	
Cloud Cover	20%	80%	10%	10%	80%	
Wind Speed	1	2-3	0-1	0-1	1	
					After rain	
1 Onduline		Slow-worm 1 female Shrew	Slow-worm 1 female			
2 Metal		Slow-worm 1 female		Slow-worm 1 female		
3 Metal	Slow-worm 1 male	Slow-worm 2 juvenile females	Slow-worm 2 juvenile	Slow-worm 1 female		
4 Onduline		Slow-worm 1 female	Slow-worm 1 female 1 Male	Slow-worm 1 female	Slow-worm 3 female	
5 Metal	Slow-worm 1 male, 1 juvenile female	Slow-worm 3 female, 2 male, 1 juvenile female		Slow-worm 2 male, 5 female	Slow-worm 4 female, 2 male	
6 Onduline		Shrew nest		Slow-worm 1 female	Slow-worm 1 female	
7 Metal	Slow-worm 1 male	Slow-worm 1 male		Slow-worm 1 female		
8 Metal			Slow-worm 1 female		Slow-worm 2 female	
9 Metal				Slow-worm 2 male	Slow-worm 1 female	
10 Metal		Slow worm 1 female, 1 juvenile female	Slow-worm 1 juvenile	Slow-worm 3 female, 1 juvenile female	Slow-worm 2 female	
11 Metal						

12 Onduline				Slow-worm 1 female	Slow-worm 3 female Grass snake 1 Vole	
Transect sightings						
	4	14	7	19	18	



Map of artificial refuge locations as described in table



Top: ACO 10; bottom: ACO 2

Appendix B: Protected Species Legislation

Species	Relevant Legislation	Level of Protection
Reptiles	<ul style="list-style-type: none"> ○ Partially protected by the Wildlife and Countryside Act 	<p>The WCA (1981) makes it an offence to:</p> <p>intentionally kill or injure these animals</p> <p>sell, offer for sale, advertise for sale, possess or transport for the purposes of selling any live or dead animals or part of these animals</p>