
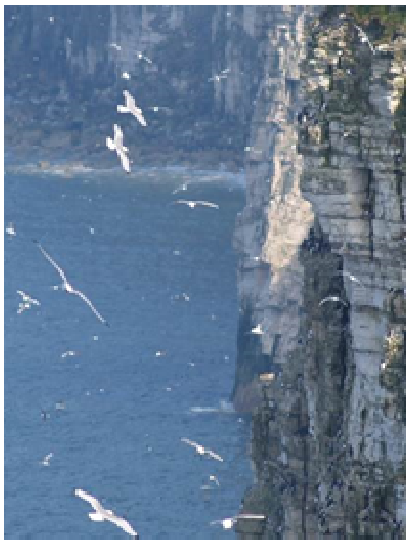


Reptile Survey

Boverton, Vale of Glamorgan

For

Barratt Homes South Wales

Project No.: ABAW105 / 007

May 2015

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001	Final	15/05/15	Andrew Bone	Jonathan Reeves	Liz Bedford

Disclaimer:

Contents

1. Summary and Main Recommendations

1.1 Summary

1.1.1 Barratt Homes South Wales are seeking planning permission for a residential development located adjacent to the B4265, Boverton, Vale of Glamorgan. The development will be located on 2.41 ha of farmland and will comprise the construction of residential units and associated tree planting and public open spaces. The location of the site is shown in Figure 1.

1.1.2 In March 2015 Thomson Ecology was commissioned to undertake a reptile survey to determine the presence or likely absence of reptiles at the site. The brief was to undertake a reptile survey using a visual search and survey of artificial reptile refugia in suitable habitat on site, comprising one visit to distribute the refugia and seven survey visits to check for the presence of reptiles.

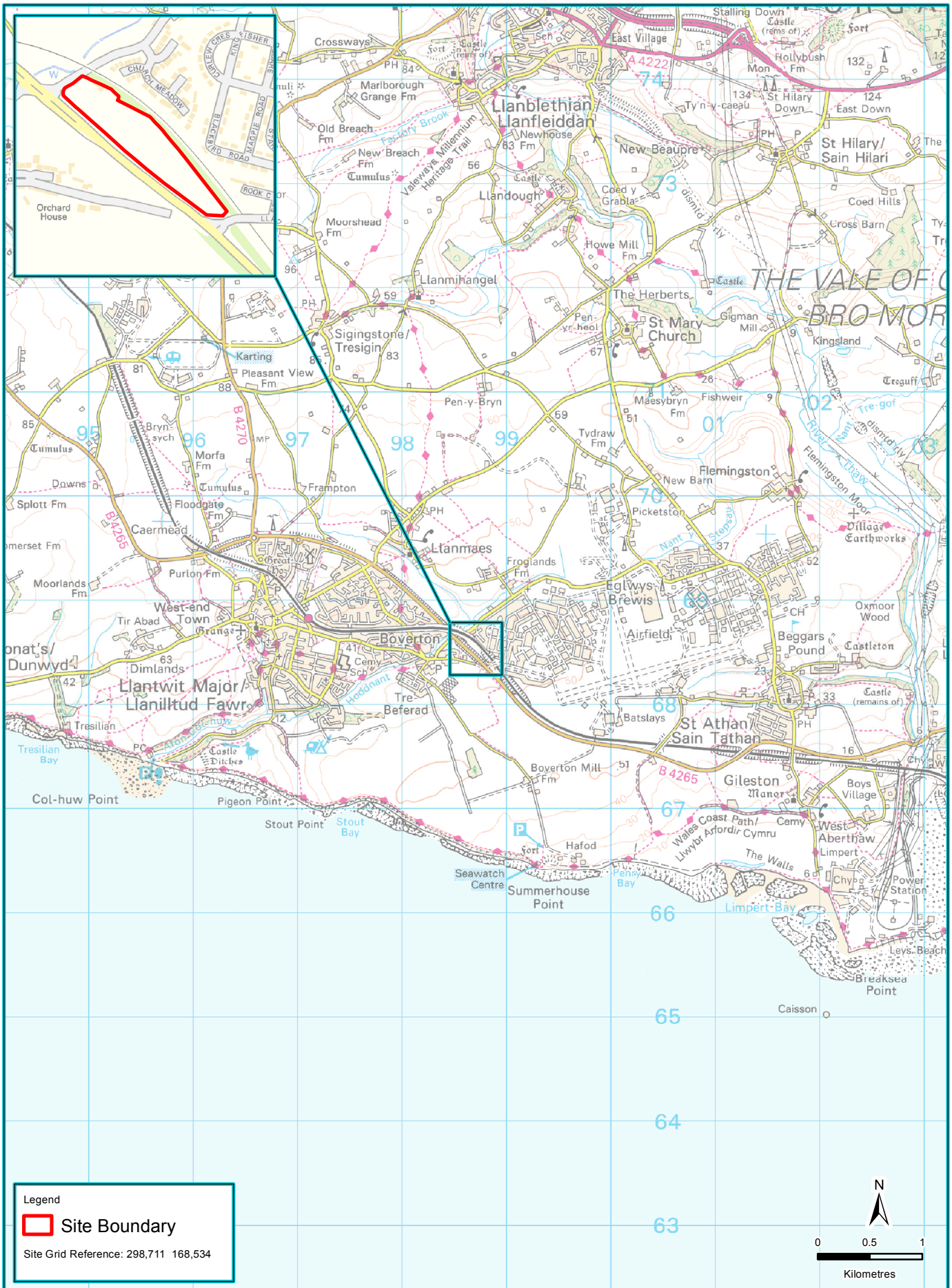
1.1.3 The site was found to support slow worm (*Anguis fragilis*), which is estimated as being present at a low population size. Slow worm was recorded in the centre of the site and towards the south eastern boundary of the site, see Figure 2.

1.1.4 Slow worm receives protection under the Wildlife and Countryside Act 1981, as amended. As it is an offence to deliberately kill or injure slow worm, this will need to be avoided during the development process. Slow worm is also a Species of Principal Importance in Wales under Section 42 of the Natural Environment and Rural Communities Act 2006. It is government policy that local authorities should consider the conservation status of these species when determining the success of planning applications.

1.2 Main Recommendations

1.2.1 It is recommended that a reptile mitigation method statement should be agreed with the Local Planning Authority, which would be expected to include:

- Identification and, where necessary, enhancement of a suitable receptor site for use by reptiles;
- Installation of reptile exclusion fencing around the site;
- A programme of capture and removal of slow worm from within the site and translocation to the receptor site between March and September for a minimum of 30 days;
- Site clearance under an ecological watching brief; and
- Management of the receptor site to ensure the population remains viable.



Client: Barratt Homes South Wales		Drawing Ref: ABAW105/18445/1	
Figure Number: 1		Scale at A4: 1:50,000	
Figure Title: Site Location		Drawn: KM	Checked: NS
		Date: 05/05/2015	Date: 05/05/2015

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Legend

Reptile Survey Results

Number of slow worm per visit

- 1
- 3
- Reptile Refugia
- Site Boundary

Site Grid Reference: 298,712 168,532

Drawing Ref	ABAW105/18446/1
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Date: 05/05/2015	Date: 05/05/2015
Client	Barratt Homes South Wales
Figure Number	2
Figure Title	Reptile Refugia Locations and Survey Results

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2. Introduction

2.1 Development Background

2.1.1 Barratt Homes South Wales is proposing a residential development on a site in Boverton, located adjacent to the B4265 in the Vale of Glamorgan. The original proposal involved the development of a 1.85 ha area of land comprising two fields, however this has now been expanded to include an additional adjacent field within the development. In addition to the construction of residential units, the development will incorporate tree planting and the creation of public open spaces. The development will be accessed from the adjoining B4265 along the south-western perimeter of the development site. These proposals are hereafter referred to as 'the development'.

2.1.2 The development will be located on 2.41 ha of farmland (grid reference SS987685), between the B4265 Llantwit Major bypass and the Vale of Glamorgan railway line on the eastern edge of Boverton, see Figure 1. The area affected by the development is hereafter referred to as 'the site'.

2.1.3 Planning permission was sought for the original proposal in 2014 (planning application reference: 2014/ 009951/FUL), however following comments from the county ecologist, a reptile survey was commissioned at the site for 2015.

2.1.4 Planning permission for the revised development proposal is being sought by Barratt Homes South Wales. The site lies within an area identified in the Vale of Glamorgan Deposit Local Development Plan 2011 – 2026 for proposed housing to which Proposal MG2 applies. Policy MG2 – Housing allocations state that '*in order to meet housing requirements identified in policy SP3 land allocated for residential development at the following location*s' where the site is identified as '*MG2 (22) Land adjacent to Llantwit Major bypass'*.

2.2 Ecology Background

2.2.1 In July 2014, Thomson Ecology was commissioned by Barratt Homes South Wales to undertake an extended Phase 1 habitat survey and desk study to inform a planning application for the original Phase 1 site boundary (Thomson Ecology Report Ref: ABAW105/002/002 issued August 2014). No records of reptiles were recorded within 1 km of the site during the desk study; the site was found to mainly comprise poor semi-improved grassland; however this was unsuitable for reptiles due to the short length of the vegetation. As the site was subsequently found to have become suitable for reptiles, a reptile survey was recommended for 2015.

2.2.2 In April 2015, Thomson Ecology was commissioned by Barratt Homes South Wales to undertake an extended Phase 1 habitat survey of the additional field to be included within the development (Thomson Ecology Report Ref: ABAW105/009/003/002, issued May 2015). Habitat suitable to support reptiles was identified on site in the form of semi-improved grassland and field margins at the base of hedgerows and dense scrub.

2.2.3 A summary of the biology, conservation status and legal protection of reptiles is given in Appendix 1.

2.3 The Brief and Objectives

2.3.1 Barratt Homes South Wales commissioned Thomson Ecology on 23rd March 2015 to undertake a reptile presence/ absence survey within the site. The brief was to include:

- A site visit to distribute artificial refugia in suitable habitat at a density of approximately 50/ha, in Phase 1 and Phase 2 of the site adjacent to the B4265 Llantwit Major Bypass, Boverton, grid references SS986685 and SS988684;
- Seven survey visits to check the artificial refugia for the presence of reptiles during suitable conditions, retrieving the refugia on the seventh visit;
- A single report to include an introduction, methodology, results of the survey, a discussion of any legal or planning policy issues regarding reptiles in relation to the development and our recommendations as to how these may be overcome; and
- Appropriate digitised mapping.

2.4 Limitations

2.4.1 All surveys were carried out in optimal conditions and at an optimal time of year.

2.5 Surveyors

2.5.1 Surveys were undertaken by Andrew Bone BSc (Hons) MSc and Janine Burnham BSc (Hons) MRes.

3. Methodology

3.1 General Approach

3.1.1 The survey area encompassed 2.41 ha of farmland, with survey effort evenly distributed across the site, see Figure 2. Two survey methods were used to determine the presence or likely absence of reptiles. These were a visual search for basking reptiles and the checking of artificial refugia deployed specifically to attract reptiles.

3.1.2 For each reptile species found to be present, a size class estimate was made, based on Herpetofauna Groups of Britain and Ireland (HGBI 1998) guidelines.

3.1.3 Survey visits were undertaken during the active season for reptiles (generally mid-March to early October) when weather conditions were most suitable for reptile surveys. This excludes periods of heavy rain, strong wind and temperatures below 9°C and above 20°C (Gent & Gibson, 2003).

3.2 Presence / Absence Survey

Visual Search

3.2.1 On seven occasions the survey area was walked around slowly looking for basking reptiles. Any reptiles seen were approached cautiously so as not to disturb them and to allow species identification. Where necessary, binoculars were used to aid identification. The number, species, life stage and location of any reptiles seen were recorded on a map of the survey area using a mobile mapper. Any evidence of reptiles such as sloughed skins was also recorded.

Refugia Search

3.2.2 On 31st March 2015, a total of 120 artificial refugia were placed in suitable locations throughout the survey area distributed at approximately 10 metre intervals, giving an approximate density of 50 artificial refugia per hectare.

3.2.3 The artificial refugia were comprised of 0.5 m x 0.5 m cuts of roofing felt. The refugia were positioned so that they were in contact with the ground, in areas of suitable habitat and exposed to sunlight. The location of artificial refugia was mapped using a hand-held gps enabled mobile mapping device.

3.2.4 The artificial refugia were then left in place for one week before the survey commenced. Subsequently, on seven occasions, a minimum of two days apart, all of the refugia were cautiously checked for reptiles, both on top and underneath. If any reptiles were found, the refugia location, species, life stage and numbers of reptiles were recorded. Any evidence of reptiles such as sloughed skins was also recorded.

3.2.5 On days forecast to be hot and sunny, the survey was conducted during the morning or late afternoon, when the temperature beneath the refugia was not too high. On days forecast to be cooler or cloudy, the survey was conducted in mid- to late morning or early to mid- afternoon. The air temperature in the shade was recorded on each survey visit.

3.2.6 The artificial refugia were collected up and removed from the site after the end of the survey.

3.3 Dates of Survey

3.3.1 The table below shows the time of visit, the date, air temperature, temperature under refugia and general weather conditions for each of the seven visits.

Table 1: Details of reptile surveys

Visit No.	Date	Time (start/finish)	Air Temperature (°C)	Temperature under Refugia (°C)	Conditions
Refugia deployment	31/03/2015	-	-	-	-
1	07/04/2015	14.00 - 16.00	16	20	Dry, sunny, no wind, 0% cloud cover
2	10/04/2015	12.45 - 14.00	13	17	Dry, cloudy/ overcast, light wind, 90% cloud cover
3	13/04/2015	13.45 - 15.30	16	22	Dry, sunny, light wind, 10% cloud cover
4	16/04/2015	12.00 - 14.00	15	19	Dry, sunny, light wind, 10% cloud cover
5	20/04/2015	11.00 - 15.00	15	21	Dry, sunny, light wind, 10% cloud cover
6	23/04/2015	11.30 - 12.45	16	20	Dry, sunny, no wind, 10% cloud cover
7	27/04/2015	12.45 - 14.10	11	17	Dry, sunny, light wind, 10% cloud cover

4. Results

4.1 Visual Search

4.1.1 No reptile species were observed during the visual search.

4.2 Refugia Search

4.2.1 Slow worm (*Anguis fragilis*) was the only reptile species recorded at the site. Slow worm was recorded on all but the first survey visit. Figure 2 shows the location of reptile records.

4.2.2 The peak count of adult slow worm (maximum number recorded on any single visit) was four, recorded on the fifth and sixth survey visits.

4.2.3 Herpetofauna Groups of Britain and Ireland (HGBI 1998) guidelines determine a low population of slow worm to be less than 50 per hectare. The peak counts recorded give an approximate population density of 1.7 per hectare and consequently the population size class is estimated as low.

4.2.4 The complete results for each survey visit are provided in Table 2 below.

Table 2: Reptile survey results showing number of slow worms observed (peak counts given in bold).

Visit No.	Date	Male	Female	Unknown Sex	Total Adults	Juveniles
1	07/04/2015	0	0	0	0	0
2	10/04/2015	1	1	0	**2**	0
3	13/04/2015	1	0	0	**1**	0
4	16/04/2015	1	0	1	**2**	0
5	20/04/2015	1	3	0	**4**	0
6	23/04/2015	2	2	0	**4**	0
7	27/04/2015	2	0	0	**2**	0

5. Legal and Planning Policy Issues

5.1.1 The content of the legislation and planning policy section is the legislation and planning policy issues that we know are relevant based on this reptile survey.

5.1.2 As set out in Appendix 1, slow worm is protected by the Wildlife and Countryside Act 1981, as amended. This makes it an offence to intentionally kill or injure a slow worm.

5.1.3 Slow worm is also listed as a Species of Principle Importance in Wales under Section 42 of the Natural Environment and Rural Communities NERC Act 2006. It is government policy that local authorities should consider the conservation status of this species when determining the success of a planning application.

5.1.4 Planning Policy Wales (PPW) states that '*the presence of a species protected under European or UK legislation is a material consideration when a local planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat'*.

5.1.5 Without appropriate mitigation, the development could contravene wildlife legislation and policy with respect to slow worm. This is because the clearance of the site could result in the killing or injury of this species. However, using established techniques it should be possible to:

- Avoid killing or injuring slow worm during the development process; and
- Adequately mitigate any adverse impact on slow worms at this site, by maintaining and enhancing the population size of this species.

5.1.6 To comply with legislation and planning policy, the avoidance, mitigation and compensation measures outlined in Section 6 should be adopted as part of the development proposal.

6. Recommendations

6.1.1 It is recommended that a reptile mitigation strategy should be prepared which should be agreed with the Local Planning Authority. The mitigation strategy should include a working method statement covering the approach that will be taken to safeguard reptiles during the development process. The mitigation programme would be expected to include:

- Identification of a suitable receptor site for use by reptiles (to be identified on site if possible);
- Enhancement of the receptor site if necessary;
- Installation of reptile proof fencing around the areas found to support slow worm;
- A programme of capture and removal of reptiles from within the areas and translocation to the receptor site between March and September for a minimum of 30 days, only ceasing when no reptiles have been captured for a minimum of five consecutive days;
- Site clearance under ecological watching brief; and
- A programme of management and monitoring to ensure that the reptile population remains viable within the receptor site.

7. Conclusion

7.1.1 The reptile survey recorded an estimated low population of slow worm on the site with peak counts of four slow worms.

7.1.2 Slow worm is legally protected under the Wildlife and Countryside Act 1981, as amended, and without appropriate mitigation the development could result in causing an offence through killing or injuring slow worm. The preparation and implementation of a reptile mitigation strategy is recommended to ensure that reptiles are safeguarded throughout the development process.

8. References

8.1.1 Gent and Gibson (2003). Herpetofuana Workers Manual. JNCC, Peterborough.

8.1.2 HGBI (1998). Evaluating local mitigation/ translocation programmes: Maintaining best practice and lawful standards. Froglife.

8.1.3 Thomson Ecology (2014). Desk Study and Extended Phase 1 Habitat Survey. Boverton, Vale of Glamorgan. Report Reference: ABAW105/002/002. Issued August 2014.

8.1.4 Thomson Ecology (2015). Desk Study and Extended Phase 1 Habitat Survey. Boverton, Vale of Glamorgan. Report Reference: ABAW105/009/003/002. Issued May 2015.

9. Appendix 1: British Reptiles

9.1 Introduction

9.1.1 A summary of the biology of British reptiles, the legislation that protects them and other mechanisms of highlighting species of conservation concern is provided below.

9.2 Biology

9.2.1 Five British reptile species can be found in Wales. These are the adder (*Vipera berus*), grass snake (*Natrix natrix*), common lizard (*Zootoca vivipara*), sand lizard (*Lacerta agilis*) and slow worm (*Anguis fragilis*). The other British species, the smooth snake (*Coronella austriaca*), is restricted to parts of southern England only. In addition, occasional sightings of non-native alien species may occur, arising from escapes or illegal releases. A summary of each of the native species is given below, based on information provided in Arnold (1995), Beebee and Griffiths (2000) and Gent and Gibson (1998).

Adder

9.2.2 Adders emerge from hibernation from March onwards and bask in open areas, particularly in spring. The mean temperature of a basking adder is about 33°C. Mating occurs every year throughout April and May and the young are born in late August to September. Hibernation commences in October. Adders have a distinctive zigzag pattern running down the length of their spine. Males are generally white or pale grey with a black zigzag whilst females are a pale brown colour, with a darker brown zigzag. They are a venomous species with small mammals making up the majority of their diet.

9.2.3 The adder has a widespread but patchy distribution in Britain and is more abundant in the south than the north. Nevertheless, species records exist for northern Scotland. They require undisturbed, open sunny areas in proximity to thick cover south-facing slopes with a mosaic of bare ground, bracken, tall heath and rocky outcrops may be ideal, although heathland, moorland, coarse grassland and scrub may also suffice.

Grass snake

9.2.4 The grass snake is the largest snake in Britain and is easily identifiable by its green/olive body, dark streaks on the flanks and a distinct yellow and black collar behind the head. They emerge from hibernation in March and, during spring in particular, bask in open areas in order to raise their body temperature. Active grass snakes maintain temperatures of between 26 and 30°C. Eggs are laid in June and July with the young hatching in September. Their main food items are amphibians and fish, which they hunt in both terrestrial and aquatic environments.

9.2.5 Grass snakes are widespread in Wales, but appear to be commonest near the west coast and are rather rare in the central region. The grass snake is essentially an aquatic species, occurring mainly where there are healthy populations of amphibians. Open areas with direct sunshine in proximity to dense cover are also important, as are suitable egg laying sites, such as compost or manure heaps.

Common lizard

9.2.6 The common lizard is the smaller of the two British lizards with the typical legged body form. Common lizards typically emerge from hibernation from March onwards, but earlier emergence can occur during exceptionally warm and sunny conditions. Common lizards bask in open sunny areas and try to achieve an optimum operating temperature of around 30°C. The young are born from mid-July to mid-September and hibernation commences in October. The main food items of this species are invertebrates.

9.2.7 Common lizards have a widespread distribution across Wales and the rest of Britain. They prefer undisturbed ground, with dense but short vegetation and patches of bare ground or promontories that are fully exposed to the sun. South facing slopes are often favoured. They are found in a variety of open habitats including roadside verges, railway embankments, woodland clearings, rough grassland, scrub, heathland and coastal sand dunes.

Sand lizard

9.2.8 The sand lizard is the other British lizard with the typical legged body form. The sand lizard is generally more bulky with a blunt snout, and the males have vivid green flanks in the spring. Sand lizards emerge from hibernation from February onwards. They bask in open, sunny areas in spring but spend little time basking in the height of summer. They try to achieve a body temperature of between 27.5 and 32.5°C. Eggs are laid from the beginning of June to the end of August and hatch between 7 and 12 weeks later. Hibernation commences in early October. The main food items of this species are invertebrates.

9.2.9 The sand lizard has very specialised habitat requirements and only occurs naturally on lowland sandy heathland and on coastal dunes densely vegetated with marram grass (*Ammophila arenaria*). The sand lizard was once common on coastal sites along the north Wales coast, but became extinct in Wales during the 1960s due to habitat loss and sea defence development. It has been re-introduced to a site in North Wales, where a breeding population have successfully established themselves. Further suitable sites are being sought.

Slow worm

9.2.10 The slow worm is a legless lizard that superficially resembles a snake. Slow worms emerge from hibernation from March onwards. When active, slow worms rarely bask in open areas and instead try to maintain a body temperature between 14.5 and 28°C mainly by contact with warm surfaces. The young are born from mid-August to mid-September and hibernation commences in October. The main food items of this species are invertebrates.

9.2.11 Slow worms have a widespread but rather patchy distribution across Wales. They require fairly thick vegetation interspersed with sunny areas for thermoregulation and underground or covered refuges. They are found in a wide variety of habitats including rough grassland, heathland, moorland, downland, hedgerows, scrub and woodland edge. Good populations can sometimes be found on railway embankments, motorway verges and allotments.

9.3 Site Designation

9.3.1 The most important sites for reptiles in the UK receive statutory protection under the following legislation:

- Wildlife and Countryside Act 1981, as amended;
- The Countryside and Rights of Way Act 2000 (which amends the Wildlife and Countryside Act); and
- Natural Environment and Rural Communities Act 2006 (which amends the Wildlife and Countryside Act).

9.3.2 Sites designated under the Wildlife and Countryside Act 1981 (WCA) are known as Sites of Special Scientific Interest (SSSIs). SSSIs received further protection under the Countryside and Rights of Way Act 2000 (CRoW) and the Natural Environment and Rural Communities Act 2006 (NERC).

9.3.3 Some SSSIs are designated for the populations of reptiles that they support. The criteria for selecting SSSIs on the basis of their reptile populations are provided in Guidelines for the Selection of Biological SSSIs (NCC, 1989):

- Sand Lizard – all important and established populations in Dorset and all established populations elsewhere;
- Other reptiles – best locality in a given area with outstanding assemblages of at least 3 species of the 4 other reptile species.

9.3.4 Sites that qualify as SSSIs are considered to be of at least national importance for the reptiles they support.

9.3.5 Sites designated for nature conservation at the county level may also include reptile populations as part of the site qualifying criteria, although the criteria used may vary from county to county. Such sites are protected through the planning system and there is generally a presumption against development that affects such sites in local authority development plans.

Planning Policy

9.3.6 Planning Guidance, Technical Advice Note 5; Nature conservation and planning (TAN5) gives further direction with respect to land use and development. It states that protected species, including reptiles, should be a material planning consideration when local authorities are considering a development proposal that is deemed likely to result in disturbance or harm to the species or its habitat.

9.3.7 Furthermore, the Natural Environment and Rural Communities (NERC) Act (2006) places a duty on all public authorities to conserve biodiversity; conserve including preservation and enhancement.

9.4 Species Protection

Legislation

9.4.1 Both within and outside designated sites, individual smooth snakes and sand lizards are fully protected by the Conservation of Habitats and Species (Amendment) Regulations 2012 (which replaces the Conservation (Habitats &c) Regulations 1994). The Regulations make it an offence, with very few exceptions, to:

- Deliberately capture, injure or kill a smooth snake or sand lizard;
- Deliberately disturb a smooth snake or sand lizard in such a way as to be likely:
  i. to impair its ability to survive, to breed or reproduce, or to rear or nurture its young; or
  ii. to impair its ability to hibernate or migrate; or
  iii. to affect significantly the local distribution or abundance of the species to which they belong.
- Damage or destroy a breeding site or resting place of a sand lizard;
- Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead smooth snake or sand lizard, or any part of, or anything derived from a smooth snake or sand lizard.

9.4.2 In addition to the protection given to sand lizard under the Conservation of Habitats and Species (Amendment) Regulations 2012 already described, sand lizard are also partially protected in Wales under the Wildlife and Countryside Act, which adds the following offences (with certain exceptions):

- Disturbance while it is occupying a structure or place which it uses for shelter or protection; or
- Obstructing access to any structure or place used for shelter or protection.

9.4.3 If proposed work could cause killing, injury or disturbance to this species or damage to its habitat, appropriate mitigation which seeks to avoid these impacts should be devised and implemented under licence from Natural Resources Wales.

9.4.4 Grass snake, common lizard, slow worm and adder also receive some protection under the WCA, though are protected from intentional killing, injuring and selling only. If proposed work could result in the killing and/or injury of grass snake, common lizard, slow worm or adder, appropriate mitigation should be devised and implemented with agreement from the local planning authority or Natural Resources Wales. However, mitigation for these species is not subject to licensing by Natural Resources Wales.

9.5 UK Post-2010 Biodiversity Framework and Species of Principal Importance

9.5.1 Published by the Joint Nature Conservation Committee (JNCC) and the Department for Environment, Farming and Rural Affairs (Defra) in July 2012, the UK Post-2010 Biodiversity Framework identifies UK-scale activities and priority works that are required to deliver the EU

Biodiversity Strategy. Following a process of devolution, the framework is underpinned by country level strategies which are now largely responsible for continuing the work carried out under the former UK Biodiversity Action Plans (UK BAP). JNCC guidance dictates that UK BAP background information on priority species and habitats still remains relevant and it now forms the basis of country specific priority lists which, for Wales, are specified under Section 42 of the NERC Act 2006. The Section 42 list is used as a guide and a reference for ensuring that appropriate consideration is given to the conservation of biodiversity in all development activity, and affords legal protection to those species and habitats it includes.

9.5.2 All British reptiles have been adopted as Species of Principal Importance for the Conservation of Biodiversity in Wales. This places a duty on all government departments to have regard for the conservation of these species and on the Secretary of State to further, or promote others to further, the conservation of these species. Furthermore, TAN5 states that species of Principal Importance for the conservation of biodiversity should be protected from the adverse effects of development, which presumably includes those listed the former UK BAP and on Local or Regional priorities species lists.

9.6 References

9.6.1 Arnold, H.R (1995). Atlas of amphibian and reptiles in Britain. HMSO. London.

9.6.2 Beebee, T.J.C and Griffiths, R.A (2000). Amphibians and Reptiles. Harper Collins Pulishers. London

9.6.3 Countryside Council for Wales (2005). Reptiles in Wales. Species Series.

9.6.4 Gent, A.H and Gibson, S.D eds (1998). Herpetofauna Workers Manual. Joint Nature Conservation Committee, Peterborough.

9.6.5 JNCC and Defra (on behalf of the Four Countries' Biodiversity Group). (2012). UK Post-2010 Biodiversity Framework. Available from: http://jncc.defra.gov.uk/page-6189.

9.6.6 NCC (1989). Guidelines for Selection of Biological SSSIs. Nature Conservancy Council, Peterborough.