

Reptile Survey report
Land at Burngallow, Trewoon
Cornwall
July 2022

A report by

James Gilroy BSc (Hons), MSc - Ecologist

Report details

Site address: Land east of Blackpool pit at Burngullow Common, Trewoon,
St Austell, Cornwall
Grid reference: SW 983 541
Report date: 27th July 2022
Report author: James Gilroy BSc (Hons), MSc
Report reviewer: Colin Hicks BSc (Hons) MCIEEM

Report reference: WOR-2836.Reptiles

Declaration of compliance

BS 42020:2013

This study has been undertaken in accordance with British Standard 42020:2013 Biodiversity, Code of practice for planning and development.

Code of Professional Conduct

The information which we have prepared is true, and has been prepared and provided in accordance with 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.

Validity of survey data and report

The findings of this report are valid for 36 months from the date of survey. If work has not commenced within this period an updated survey by a suitably qualified ecologist will be required.

Non-technical summary

Western Ecology has been commissioned to complete reptile surveys on land south-east of Blackpool pit, adjacent to Burngullow Common near Trewoon in Cornwall. A single wind turbine and associated infrastructure is proposed.

Thirty-eight reptile refugia were placed onsite, and after a settling period were inspected on seven separate occasions for concealed reptiles, either in the morning or late afternoon/early evening, whilst adjacent areas were searched for basking or feeding reptiles.

A maximum count of 4 Slow Worm, 1 Common Lizard and a piece of shed snakeskin (assumed to be Adder) were encountered during the reptile refugia survey. The development site is assessed as a Key Reptile Site due to meeting criteria regarding the number of species recorded, rather than the population sizes it supports. The Site forms part of Burngullow Common, a larger expanse of suitable habitat and is also likely to support the three reptiles recorded. It is therefore reasonable to assume that Burngullow Common functions as a Key Reptile Site, of which the development site is part of and contributes to, given the likely dispersal of reptiles between the Site and Burngullow Common. The permanent loss of 0.19ha of habitat to the development is therefore not considered likely to impact the functionality of the Burngullow Common as a Key Reptile Site during the operation of the turbine, based on the low population densities recorded and the amount of available retained habitat with connectivity to the Site. No mitigation for habitat loss is recommended. Construction activities associated with the proposed development however, have potential to kill or injure individual reptiles, and mitigation is recommended on this basis

Table of contents

1. Introduction	5
1.1. Site location	5
1.2. Survey aims	5
2. Methodology	6
2.1. Habitat assessment	6
2.2. Refugia survey	6
2.3. Survey constraints	6
3. Results	7
3.1. Habitat assessment	7
3.2. Refugia survey	7
Map 1. Reptile survey: refugia locations	8
4. Evaluation of the site for reptiles	9
4.1. Slow Worm	9
4.2. Common Lizard	9
4.3. Adder	9
4.4. Grass Snake	9
4.5. Reptile community	9
5. Reptiles and the Law	11
6. Assessment of Impact	12
6.1. Construction phase	13
6.2. Operational phase	13
References	15

1. Introduction

Western Ecology has been commissioned to complete reptile surveys on land south-east of Blackpool pit, adjacent to Burngullow Common near Trewoon in Cornwall. A single wind turbine and associated infrastructure is proposed.

1.1. Site location

The site lies at the eastern edge of Blackpool pit, a disused china clay quarry, located approximately 1.2km to the north-west of the village of Trewoon and approximately 3.6km to the north west of St Austell.

1.2. Survey aims

The aim of this survey is to ascertain whether the four common reptile species, Grass Snake, Adder, Slow Worm and Common Lizard, are present within this site.

The survey will allow an assessment of the importance of this site for reptiles based on a set of criteria from Froglife, the UK reptile and amphibian conservation organisation.

Where appropriate, the survey will provide the information required to determine the appropriate level of mitigation required to ensure compliance with wildlife legislation and relevant planning policy.

2. Methodology

2.1. Habitat assessment

An initial walk over assessment was completed for the site on 22nd February 2022. Habitats within the site were assessed as providing opportunities for foraging, resting and hibernating.

2.2. Refugia survey

38 artificial reptile refugia comprising 50cm x 50cm squares of bitumen roofing felt were placed across the site and surrounding areas on 1st April 2022. The total surveyed area was approximately 0.75ha of suitable habitat.

After an approximately 2 week settling period, these refugia were inspected on seven separate occasions for concealed reptiles, either in the morning or late afternoon/early evening, whilst adjacent areas were searched for basking or feeding reptiles. If reptiles were found, their age class was estimated and adults were sexed.

This methodology is in accordance with Gent and Gibson (2003) and Froglife (1999).

2.3. Survey constraints

All areas of the site were readily accessible.

Weather conditions during the survey period were suitable for reptile activity (Table 1) and there are no significant constraints to the results or conclusion of this report. It is likely that these results reflect the population status of reptiles at this site.

3. Results

3.1. Habitat assessment

The Site concerns to the north-western edge of Burngullow Common and predominantly contains an open expanse of lowland heathland which forms part of a larger expanse of habitat off-site. The western boundary is formed of a vegetated bund, supporting a mosaic of dense gorse scrub, and small fragmented areas of heathland and grassland habitats. A narrow band of woody scrub and grassland habitats exist across a bank along the northern boundary. The Site is bounded to the north and west by a haul road of bare ground.

Scrub, grassland and heathland habitats contained within the site, particularly in the southern/western section are likely to provide foraging, resting and hibernating opportunities. The site also features connectivity to an extensive area of suitable habitat associated with the wider Bungullow Common. Post-mining areas to the north of the Site are generally unsuitable.

This mosaic of habitats, with varying vegetation density and heights, provide good potential for foraging and resting common reptiles, in particular Slow Worm and Common Lizard, to be present within the Site.

3.2. Refugia survey

Details of the seven reptile refugia surveys are included in Table 1 and shown on Map 1. Surveys were completed by James Gilroy, an experienced ecologist.

During the seven surveys, Slow Worm, Common Lizard and likely Adder were recorded.

Table 1. Records for each survey visit

Survey no.	Date	Time	Weather	Results	Comments
1	15/04/2022	10:30	10°C, 60% cloud, dry, scattered cloud, wind = 2-3w	No reptiles	
2	22/04/2022	09:30	11°C, 30% cloud, sunny, dry & mild, wind = 1-2ne	1x Common Lizard (female)	Recorded in main heathland area
3	29/04/2022	10:00	12°C, 40% cloud, warm, hazy & still, wind = 0	1 x Common lizard	Dead individual. Sex undetermined.
4	05/05/2022	20:00	12°C, 60% cloud, mild, dry and breezey, wind = 2-3w	No reptiles	
5	23/05/2022	08:15	12°C, 80% cloud, mild, overcast, dry, wind = 1-2w	No reptiles. Piece of shedded snakeskin found under matt	Likely Adder
6	09/06/2022	08:15	14°C, 70% cloud, dry, sunny spells, calm, wind = 0	4 x Slow Worm (2x male & 2x female)	1 slow worm (f) located in main heathland area, remaining 3 (2m & 1f, on banded area)
7	04/07/2022	09:30	14°C, 80% cloud, mild, dry, overcast, wind = 2-3sw	1 x Common Lizard (juv) 2 x Slow Worm (female)	Common lizard in main heathland area, Slow Worm in banded area.



Legend

- Survey area
- Reptile refugia - survey results
 - Adder
 - Common Lizard
 - Slow Worm
 - No reptiles
- Turbine development
 - Temporary loss
 - Permanent loss

0 10 20 m

Title: Map 1. Reptile survey -
refugia locations and results

Project: Land at Burngullow,
Cornwall

Checked by: CDH Version: 01
Date: 27 July 2022

4. Evaluation of the site for reptiles

4.1. Slow Worm

Slow Worm were recorded during 2 of the 7 visits, with distribution mainly associated with the gorse scrub mosaic across the vegetated bund at the western boundary. This is likely a breeding population given the presence of both males and females.

4.2. Common Lizard

Individual Common Lizard were recorded on 3 of 7 visits, although one of these occurrences was a dead individual. Distribution was associated with open heathland areas. Presence of a juvenile indicates that there is breeding at this site.

4.3. Adder

A piece of shed snakeskin was recorded under a matt in open heathland during 1 visit out of the 7. As it was recorded in suitable habitat and during a suitable time of year, it is assumed to be Adder.

4.4. Grass Snake

Grass Snakes are typically found in damp habitats, where they prey on fish and amphibians, although they can sometimes be found in dry grassland.

Habitats within the site have limited potential for Grass Snake and none were recorded during the survey.

4.5. Reptile community

The reptile community at this site has been assessed against criteria produced by Froglife, the UK herpetofauna conservation organisation, to determine its importance (Froglife, 1999).

To allow the assessment, the highest count for adults of each species recorded on a single survey day, and within the prescribed density of 5-10 refugia per hectare, is taken to score the population of each species found at the site (Table 2).

Table 2: Key Reptile Sites Survey Assessment

Species	Low population Score 1	Good population Score 2	Exceptional population Score 3
Adder	<5	5-10	>10
Grass Snake	<5	5-10	>10
Common Lizard	<5	5-20	>20
Slow Worm	<5	5-20	>20

To qualify as a Key Reptile Site, this site must meet at least one of the criteria listed below.

List of criteria by which a site may qualify as a Key Reptile Site (Froglife 1999)

- the site supports three or more reptile species
- the site supports two snake species
- the site supports an exceptional population of one species of reptile (see Table 2)

- the site supports an assemblage of species scoring at least 4 in terms of the population number (see Table 1) – this requires a specified minimum survey effort for scoring
- the site does not satisfy items 1 – 4 but is of particular regional importance due to presence of a local rarity.

Three species were recorded at this Site which qualifies it as a Key Reptile Site.

5. Reptiles and the Law

All native reptiles are protected to some degree under the Wildlife and Countryside Act 1981 (as amended) whilst our two rarest species, the Sand Lizard and Smooth Snake are given full protection under the Act and also identified as European Protected Species.

The four common species (Slow Worm, Adder, Grass Snake and Common (Viviparous) Lizard) are protected from deliberate killing, injury and trade.

The two rare species, Sand Lizard and Smooth Snake, are given more protection that includes protection from capture and deliberate or reckless killing, injury or disturbance. Their breeding or resting places are also protected from obstruction or damage, even if it were accidental.

All six native reptiles are listed as species “of principal importance for the purpose of conserving biodiversity”.

6. Assessment of Impact

The Site qualifies as a Key Reptile Site as three species were recorded during the survey.

Low numbers of Slow Worm (max count 4) were recorded within a mosaic of gorse scrub and grassland across a vegetated bund at the western boundary. Individual Common Lizard (1), Slow Worm (1) and Adder (1) were recorded within open heathland in the centre of the Site.

An area of approximately 0.29ha of combined heathland and scrub habitat will be lost to the development footprint, with 0.1ha of this being restored post construction.

The Site is located at the north-western edge of Burngullow Common which consists of a wider expanse of predominantly lowland heathland habitat with scattered scrub. The Site features direct connectivity with this wider expanse, and which provides optimal habitat for the three species of reptile recorded during the survey. The development site is assessed as a Key Reptile Site due to meeting criteria regarding the number of species recorded, rather than the population sizes it supports. The Site features direct connectivity to Burngullow Common, a larger expanse of suitable habitat for the three reptiles recorded. It is therefore reasonable to assume that Burngullow Common is likely to function as a Key Reptile Site, of which the development site is part of and contributes to, given the likely dispersal of reptiles between the Site and Burngullow Common.

Reptile population densities have been shown to be very low at this Site with a max count of 4 per 0.75ha (surveyed area), or 1 per 0.19ha. Assuming this density applies to the wider Burngullow Common area (based on continuous nature of habitat), the loss of 0.19ha of habitat to the development would lead to the reduction in carrying capacity by approximately 1 individual Slow Worm, and likely to be lower for other species. Given the extent of optimal habitat that will remain undisturbed across the wider Burngullow Common expanse (approx. 8ha), the loss of 0.19ha to the proposed development is considered unlikely to impact the viability of the reptile populations at this site and within the wider Burngullow Common area.

A total of 0.1ha of heathland will be restored upon completion and will be managed in a way that will benefit reptiles, as per the Biodiversity Net Gain requirements.

The permanent loss of 0.19ha of habitat to the development is therefore not considered likely to impact the functionality of the Burngullow Common as a Key Reptile Site during the operation of the turbine, based on the amount of available retained habitat with connectivity to the Site. No mitigation for habitat loss is recommended.

Construction activities associated with the proposed development however, have potential to kill or injure individual reptiles, and mitigation is recommended on this basis.

6. Recommendations

Survey results indicate that the Site supports a Low population size class of Slow Worm, Common Lizard and Adder.

6.1. Construction phase

Site clearance has potential to kill or injure individual animals. This is likely to be an offence under wildlife legislation.

Site clearance in the period late March to October:

If site clearance occurs during the active reptile season (late March to October) areas to be affected by should be de-vegetated prior to any site activities under the supervision of a suitably qualified ecologist. Grassland and scrub vegetation will initially be cut to a height of approximately 20cm, having first used an ecologist to walk and beat the ground. This will encourage many reptiles to disperse naturally into the retained uncut vegetation to the north, east and south of the development. After at least 48hrs a second cut will be made as close to ground level as possible. This should ensure that Slow Worm are displaced from the construction site. During construction, cutting will continue to ensure reptiles do not recolonise the development area.

Site clearance in the period November to early March

Grassland and scrub vegetation provide enough structure for hibernating reptiles. Site clearance during the reptile hibernation period (November to late March) should be avoided. If this is not practicable, hibernacula will need to be created and the site will be carefully cleared under the direct guidance of an ecologist during periods when daytime temperatures are above 8°C.

6.2. Operational phase

Retained areas to the west and south currently have habitat suitable for all three species of reptile recorded here. The site supports low numbers of reptiles and it is unlikely that loss of habitat to the development would have an adverse effect on the ability of reptiles to survive within the retained expanse of habitat across Burngullow Common. Management of restored heathland habitat within the development site is required to meet moderate condition (as detailed in BNG report) and this will benefit reptiles present here, and help to ensure the site continues to support reptile populations of Slow Worm, Common Lizard and Adder.

On-going management will aim to enhance the current habitat by:

- Cutting back small areas of common heather/bell heather, allowing small open areas of grassland to develop. The grassland areas offers important basking areas for reptiles, and the edges between ericoids and grassland provide areas for reptiles to shelter. Scattered areas should be cut back every two years on a rotational basis during the reptile hibernation period November to February inclusive.
- Any encroaching scrub should be cut with hand tools or tractor-mounted hedge trimmers. Fails should not be used, as this will tend to smother adjacent habitats. Arisings should be removed from the site.

In addition, two reptile hibernacula should be built prior to the start of site clearance, one each at the base of hedgerows to the east and the north as per the design in Image 1, taken from *The Highways Agency (2005) Design Manual for Roads and Bridges: Volume 10 Environmental Design and Management, Section 4, Part 7 Nature Conservation Advice in Relation to Reptiles and Roads*.

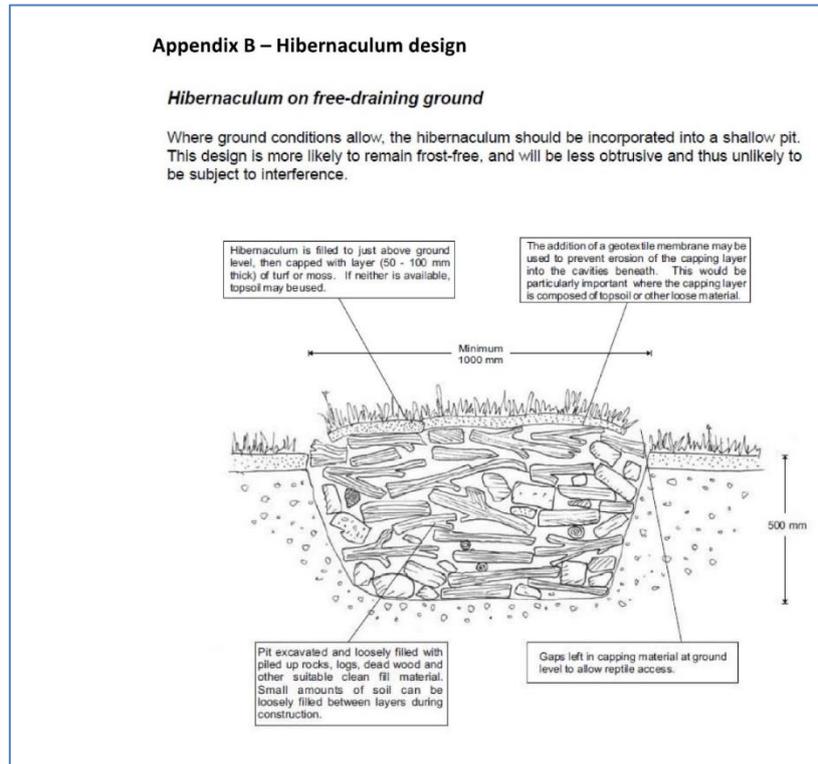


Image 1. Hibernacula design

The retained areas will be protected during the whole of the construction phase by a suitable fence and will not be used as a site compound or to store materials. No vehicles will track across it and no vehicles will park here. Construction staff will be briefed during induction as to the purpose of this area.

References

Froglife, (1999). Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10. Froglife, Halesworth.

Gent, T., and Gibson, S. (eds). 2003. *Herpetofauna Worker's Manual*. Joint Nature Conservation Committee, Peterborough.