

Vattenfall Wind Power Ltd Thanet Extension Offshore Wind Farm

Annex 5-7: Reptile Survey Report

June, 2018, Revision A

Document Reference: 6.5.5.7

Pursuant to: APFP Reg. 5(2)(a)



Reptile Survey Report

Vattenfall Wind Power Ltd

Thanet Extension Offshore Wind Farm

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June, 2018

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Date of Approval	June 2018
Revision	A

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THANET EXTENSION OFFSHORE WIND FARM – ONSHORE GRID CONNECTION

Reptile Survey Report

Prepared for: GoBe Consultants



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SLR Ref No: 414.05356.00003

February 2018

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1.0 Introduction

1.1 Background

SLR Consulting was commissioned by GoBe Consultants (on behalf of Vattenfall Wind Power) in July 2017 to carry out a range of ecological surveys along the route of the onshore grid connection for the proposed Thanet Extension Offshore Wind Farm (TEOW). The purpose of the surveys was to provide baseline data to inform an Environmental Impact Assessment (EIA).

1.2 Site Location and Description

The site is located in east Kent, to the north of Sandwich and southwest of Ramsgate. The route of the proposed onshore grid connection extends from the proposed landfall within Pegwell Bay Country Park (CP), south to the proposed substation location at the north end of the former Richborough Port site. The route then continues under the A256 to a connection at an under-construction National Grid substation within the former Richborough Power Station site. The site boundaries (henceforth referred to as the Red Line Boundary (RLB)) are shown in Drawing 1. It is important to note that at the time of survey the boundaries used were those being considered at the time of Preliminary Environmental Information, which have subsequently been subject to minor changes. The initial RLB and associated study areas considered at that time have been retained within this report for the purpose of illustration, with the refined RLB illustrated in the relevant chapters of the Environmental Statement (ES).

Within the RLB, access has not been granted to the former Richborough Power Station site, to the west of the A256, beyond an initial Phase 1 walkover. This area is subject to existing ecological monitoring, data from which have been provided to inform the EIA. This area is therefore not considered within this report.

The area within the part of the RLB considered by this report includes a range of habitat types including semi-improved, improved and amenity grassland, dense and scattered scrub, small blocks of broad-leaved woodland, scattered trees and areas of hardstanding. The part of the RLB considered by this report is bordered to the east by an extensive area of mudflats, coastal saltmarsh, coastal sand dune and floodplain grazing marsh. The Stonelees and St Augustine's golf courses lie to the west and northwest respectively, to the west of Sandwich Road, with the remainder of the former Richborough Port site lying to the south.

The area within the RLB includes, in part, land forming part of the Sandwich and Pegwell Bay National Nature Reserve (NNR), Sandwich Bay to Hacklinge Marshes Sites of Special Scientific Interest (SSSI), Thanet Coast and Sandwich Bay Ramsar, and Thanet Coast and Sandwich Bay Special Protection Area (SPA). Sandwich Bay Special Area of Conservation (SAC) lies approximately 90m east of the RLB. The RLB also includes land within the Pegwell Bay CP and Stonelees Nature Reserve, managed by Kent Wildlife Trust.

1.3 Scope of Study

This report presents the findings of the reptile survey.

The aims of the survey were to provide baseline data to inform the EIA and the detailed design for the project. The assessment of impacts resulting from the proposed development and the development of mitigation measures, if required, are beyond the scope of this report and are covered in the ES.

1.4 Relevant Legislation

1.4.1 Conservation of Habitats and Species Regulations 2010

The Conservation of Habitats and Species Regulations 2010 (as amended) (the Habitats Regulations) transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats



Directive) into English law, making it an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

Reptiles listed under Schedule 2 of the Habitats Regulations comprise smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis*. Due to the combination of the geographical distribution and habitat preferances of these rare reptile species, the likelihood of occurrence within the RLB is extremely low¹. The last native sand lizards were recorded in Kent in 1969 and whilst a small sand lizard reintroduction took place at Sandwich Bay in 2004² it is understood that these animals were released in an area of sand dune habitat to the southeast of the survey area, on the opposite side of the the River Stour.

1.4.2 Wildlife & Countryside Act 1981

The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act; or
- Plant or cause to grow in the wild any plant species listed under Schedule 9 of the Act.

All four widespread reptile species (adder *Vipera berus*, grass snake *Natrix helvetica helvetica*, viviparous lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*) are subject to partial protection under the Act, in respect of killing, injuring and sale or offering for sale.

1.4.3 Natural Environment & Rural Communities (NERC) Act 2006

The NERC Act 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

Species of principal importance for the purpose of conserving biodiversity in England are listed under Schedule 41 of the Act, and include all four of the widespread reptile species. The Priority Actions for these species include ensuring the conservation status of the species is monitored and communicated; and ensuring sites are safeguarded, enhanced, and that connectivity is created³.



¹ Natural England (no date) Standing Advice Species Sheet: Reptiles.

² http://news.bbc.co.uk/1/hi/england/3657186.stm

³ Natural England (May, 2014) S41 Priority Species: Actions Spreadsheet [online]. Available from: http://publications.naturalengland.org.uk/publication/4958719460769792

2.0 Methodology

2.1 Desk Study Methodology

Although a comprehensive desk study was beyond the scope of this study, online sources (NBN Gateway, available from: https://nbn.org.uk/content-block/nbn-gateway/) and the results of a desk study carried out by Amec Foster Wheeler⁴ were reviewed for any historic records of reptile presence.

2.2 Survey Area

The survey focussed on those habitats within the RLB under consideration at the time of survey that were considered potentially suitable for reptiles, as identified during an initial ecological walkover survey by Natasha Nixon CEnv MCIEEM and Eleanor Davies MCIEEM on 8th-9th August 2017.

The wider survey area was divided into four component survey areas, as shown in Drawing 1. Example photographs of the habitats within the component survey areas are illustrated in Figure 1, below.

Figure 1
Example Photographs of Habitats within the Component Survey Areas

Photograph taken from children's playground looking eastwards.



Looking north along the cycle path that lies along the eastern edge of Pegwell Bay CP.

⁴ Amec Foster Wheeler, (2017), Thanet Extension Offshore Wind Farm: Extended Phase 1 Habitat Survey Report. DRAFT, October 2017.







Taken from a central position within Pegwell Bay CP, looking westwards along a footpath (closed due to construction works along cycle path but accessible for the reptile survey).

Taken from footpath parallel to the cycle path.

Grassland and scrub matrix typical of the majority of the habitat component within Pegwell Bay CP.

Stonelees Nature Reserve







Taken from the footpath north of the cattle grazed paddock, looking south

Baypoint Sports Centre



Taken from the northern corner of the sports pitch, looking south.

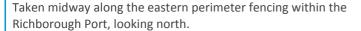


Taken from south eastern corner of the Sports Centre boundary, looking north east.



Richborough Port







Taken from the northern perimeter fencing, looking eastwards.

Habitats within the survey area were considered to have varying suitability to support the different widespread reptile species on a year round basis. Habitat suitability is influenced by a multitude of factors⁵, including ground conditions and drainage; level of vegetation complexity present; extent of suitable habitat and connectivity to other suitable areas; the availability of habitat features to provide refuges; the prevailing aspect/ shade conditions; and, for adder in particular, the level of human disturbance. The suitability of the different parts of the survey area for the four widespread reptile species was initially assessed as follows:

- high potential to support viviparous lizard in all four component survey areas;
- high potential for slow-worm and moderate potential for grass snake at Pegwell Bay CP;
- low potential for slow-worm and grass snake at Baypoint Sports Centre and Stonelees Nature Reserve;
- negligible potential for slow-worm and grass snake at Richborough Port Business Park; and
- negligible potential for adder at all sites.

2.3 Survey Methodology

Reptiles are ectotherms and are only active for part of the year, when conditions are warm enough to provide sufficient energy, hibernating over winter. The reptile survey was undertaken between 22nd August and 4th October 2017, within the active period and at a time of year considered to be profitable for encountering reptiles, due to the prevailing weather conditions.

The reptile survey primarily comprised the installation of artificial cover objects in the form of squares of bitumous felt of at least 0.5m^2 in size. The felts provide refuge and basking opportunities, facilitating the opportunity to observe individuals as they are otherwise difficult to spot by observation alone. 308 felts were used as refuges and installed in suitable habitats across the survey area (see Table 1 below); this greatly exceeds the minimum recommended rate for surveys of between 5 and 10 refuges per hectare⁶. Additionally, whilst undertaking the refuge checks, the ground was visually searched for any chance encounters of reptiles.



⁵ National Amphibian and Reptile Recording Scheme (no date) Reptile Habitat Guide [on line]. Available from http://www.narrs.org.uk/documents/Reptile habitat guide.pdf

⁶ Froglife (1999) Froglife Advice Sheet 10 Reptile Survey

Table 1
Number of Refuges Placed in each Component Survey Area

Location	Number o	of Refuges	Approximate area of suitable habitat (ha)	Approximate Rate
	Start	End	within RLB	
Pegwell Bay CP	230	187	8.00	Between 29 and 24 per hectare
Stonelees Nature Reserve	35	35	1.00	35 per hectare
Baypoint Sports centre	23	23	0.1	230 per hectare
Richborough Port	20	20	0.1	200 per hectare

The felts were left for a week for them to bed in, and to allow reptiles to encounter and adopt them for use as basking sites. Up to seven survey visits were then undertaken during suitable weather conditions, with the felts collected on the last survey and removed from site. Current survey guidelines⁶ define suitable weather conditions when air temperatures are between 9° and 18°C and an absence of strong winds and persistent precipitation. Warm or dry days following prolonged periods of cool/wet weather are considered ideal for observing reptiles.

The Froglife survey guidelines define population size classes as a mechanism to identify important sites, and as a means to compare a survey area with the classification system. The criteria are based upon the number of adult individuals of each species recorded during surveys (assuming 20 survey visits at a density of 10 refuges per hectare), as outlined in Table 2. Population size class has been determined for each of the component survey areas, although some caution is necessary when applying these criteria here due to differences in the number of visits and the density at which reptile felts were installed.

Table 2
Population Size Class Assessment

Species	Low	Good	Exceptional
Adder	< 5	5 – 10	> 10
Grass snake	< 5	5 – 10	> 10
Viviparous lizard	< 5	5 – 20	> 20
Slow-worm	< 5	5 – 20	> 20

2.4 Survey Dates, Times and Weather Conditions

The dates, times and prevailing weather conditions during the surveys are detailed in Table 3. The majority of the surveys were undertaken within the parameters set by the survey guidelines. The only exception was the survey undertaken on 26th September, when conditions were slightly warmer. Given the number of visits, intervals between visits, and the varying times when the visits were undertaken, this is not considered to have significantly affected the survey results however.



Table 3
Survey Dates, Times and Weather Conditions

Survey	Date	Start Time	Temperature (°c)	Cloud	Wind	Precipitation
Initial Set-up	22/08/17	n/a	n/a	n/a	n/a	n/a
1	31/08/17	09:30	17	50%	10mph	Shower at end of survey
2	06/09/17	07:30	13	95%	10mph	Dry throughout
3	07/09/17	10:30	16	Clear	7mph	Dry throughout
4	13/09/17	14:30	17	45%	20mph	Shower during survey
5	19/09/17	14:30	15	50%	11mph	Dry throughout
6	26/09/17	12:30	19	90%	10mph	Dry throughout
7	04/10/17	10:30	13	95%	15mph	Dry throughout

2.5 Survey Personnel

The surveys were led by Natasha Nixon, a Senior Ecologist with approximately ten years' experience and a full member of Chartered Institute of Ecology and Environmental Management (MCIEEM) and a Chartered Environmentalist (CEnv). Natasha has extensive reptile survey experience. All of the ecologists who assisted with the survey work are experienced in undertaking reptile surveys.

2.6 Survey Limitations

2.6.1 Access - Pegwell Bay CP

The survey incorporated all routes, paths and fields within the survey area that were accessible.

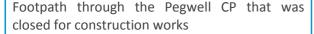
However, part of the area within the Country Park, including part of the cycle path that lies along the western boundary of the CP (and within the RLB) was blocked due to construction works. Habitats close and / or connected to these construction areas were incorporated into the survey area within the Pegwell Bay CP, although the construction areas themselves were not able to be surveyed.



Figure 2
Photographs of Inaccessible Areas – Pegwell Bay CP

Photographs







Cattle grazed paddock

Where the RLB crossed through the Pegwell Bay CP and Stonelees Nature Reserve, fields that were entirely fenced were surveyed only from the outer perimeter, along the adjacent footpath. This was to avoid livestock or other sensitive and/or unsafe areas (i.e. the salt marsh).

For safety reasons, it was not possible to incorporate the verge of Sandwich Road, as the road is fast and the verge is narrow due to the proximity of the tree line to the edge of the carriageway. However, the edge of the tree line was surveyed from the Pegwell Bay CP side.

2.6.2 Access – Other Areas

Access to the Baypoint Sports Centre and the Richborough Port Business Park component survey areas was not made available for the reptile survey until September 2017. Therefore the refuges were not installed in these two areas until 6th September, with the first survey visit undertaken on the 13th September 2017 and only three more visits undertaken. The number of refuges installed at these locations was considerably more than the recommended rate per hectare in order to increase the likelihood of individuals finding and adopting the refuges.

Although these areas were only visited on four occasions in total rather than seven, no additional visits were undertaken as presence was confirmed on the first visit. Therefore, the number of visits to these locations is not considered a significant constraint for the purpose of assessment.

2.6.3 Loss of Refuges

A number of refuges (43 in total) went missing over the course of the survey, with almost all of the loss from the sections close to the Pegwell Bay CP carpark. No further refuges were added in replacement given the high likelihood of re-occurrence. This is not considered to be a constraint to the survey effort overall given most refuges remained in place; the low suitability of the habitats within that part of the survey area; and as presence of reptiles was confirmed in this area whilst setting up the survey, and on subsequent visits.

Due to the loss of refuges consideration was given to abandoning the survey in the affected areas (to prevent possible interference with reptiles by members of the public investigating the refuges). However, those refuges that were removed were those that were most accessible to the public, and nearest to the car park. The remaining refuges that were situated within those areas were installed beneath or next to common nettle



Urtica dioica or bramble *Rubus fruticosus*; or were less visible, and therefore were less likely to be interfered with. It was therefore decided that leaving these refuges in situ and completing the survey was unlikely to result in harm to the local reptile population.



3.0 Results

3.1 Desk Study

Only one record of viviparous lizard within 2km of the survey area was identified in the desk study compiled by Amec Foster Wheeler. Their desk study also identified that a juvenile slow-worm was found within the Richborough Energy Park (an area that was not accessible as part of this survey effort); and an adult viviparous lizard was observed on the verge of the A256, outside the RLB. However, the desk study only included records from the Kent and Medway Biological Records Centre; in Kent, reptile records are submitted to the Kent Reptile and Amphibian Group (KRAG) and therefore consultation with KRAG may provide further records.

Online records⁷ within 2km of the survey area confirm the historic presence of grass snake (recorded in 1959), slow-worm (records date between 1959 and 2011) and viviparous lizard (between 1965 and 2008). Three records of sand lizard (dated 2007 and 2008) are also listed within 5km; the indicative locations of the records are to the south, on the opposite side of the River Stour, where sand dunes are amongst the habitats present⁸ and it assumed that these records relate to the 2004 reintroduction (see Section 1.4.1).

3.2 Survey Results

The surveys identified viviparous lizard and slow-worm at Pegwell Bay CP (illustrated in Figure 3 below); and viviparous lizard only at Stonelees Nature Reserve, Baypoint Sports Centre and Richborough Port Business Park. No other reptile or amphibian species were encountered during the surveys. The reptile survey results are detailed in Table 4. Drawing 2 illustrates the approximate locations in which the peak counts of individuals were recorded.

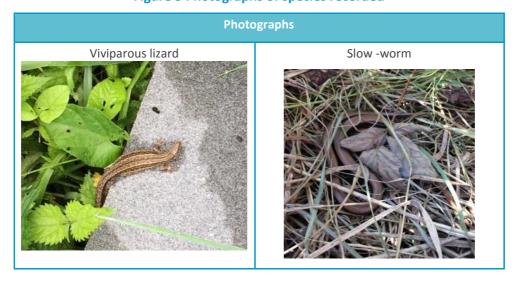


Figure 3 Photographs of species recorded



⁷ NBN Gateway [online]. Available from: https://nbn.org.uk/content-block/nbn-gateway/

⁸ JNCC (2016) Natura 2000 – Standard Data Form: Sandwich Bay UK0013077 [on line]. Available from: http://jncc.defra.gov.uk/ProtectedSites/SACselection/n2kforms/UK0013077.pdf.

Table 4
Reptile Survey Results

Visit number	Date	Pegwell Bay CP	Stoneless Reserve	Nature	Baypoint Sports Centre	Richborough Port Business Park
Set up	22/08/17	4 neonate viviparous lizards	None		N/A	N/A
1	31/08/17	5 adult viviparous lizards; 1 juvenile viviparous lizard.	None		N/A	N/A
2	06/09/17	8 adult viviparous lizards; 1 sub-adult viviparous lizard.	1 adult lizard	viviparous	Survey set-up	Survey set-up
3	07/09/17	1 adult male slow-worm; 2 adult female slow-worms; 2 sub adult male slow-worms; 5 adult viviparous lizards.	1 adult lizard	viviparous	N/A	N/A
4	13/09/17	32 adult viviparous lizards; 1 adult male slow-worm; 2 adult female slow-worms.	None		8 adult viviparous lizards; 4 sub adult viviparous lizards.	2 adult viviparous lizards
5	19/09/17	2 adult viviparous lizards; 2 sub-adult viviparous lizard; 2 neonate viviparous lizards; 1 adult female slowworm; 1 sub-adult female slow-worm; 2 neonate slow-worms.	None		1 adult viviparous lizard;3 neonate viviparous lizards.	None



Visit number	Date	Pegwell Bay CP	Stoneless Nature Reserve	Baypoint Sports Centre	Richborough Port Business Park
6	26/09/17	1 adult viviparous lizard;	None	1 adult viviparous lizard;	2 adult viviparous lizards;
		1 sub-adult viviparous lizard;		3 juvenile viviparous lizards;	1 sub adult viviparous lizard;
		1 adult female slow- worm.		3 neonate viviparous lizards.	2 juvenile viviparous lizards.
7	04/10/17	3 adult viviparous lizards; 6 sub-adult viviparous lizards;	1 viviparous lizard skin	3 adult viviparous lizards; 5 sub adult viviparous lizards;	None
		2 juvenile viviparous lizard;		1 juvenile viviparous lizard.	
		2 adult female slow- worms.			



4.0 Discussion and Conclusions

The surveys confirmed presence of reptiles in all the component survey areas. Two species were recorded, viviparous lizard and slow-worm.

Although population size class estimates should be based on at least 20 survey visits over a whole season (see Section 2.3), the criteria may be applied for a smaller number of visits with a degree of caution. Given the peak number of adult viviparous lizards and slow-worms found in each component survey area and the rate of refuges installed, the population size class assigned to each component survey area is presented in Table 5.

Table 5
Population Size Class for each Component Survey Area

Component Survey Area	Rate of Refuges per hectare	Peak Count	Peak Count based on 10 Refuges per Hectare	Score
Pegwell Bay CP	Between 29 and 24 per hectare	32 adult viviparous lizards and 3 adult slow-worms	11 adults	Good
Stonelees Nature Reserve	35 per hectare	1 adult viviparous lizard	0.3 adults	Low
Baypoint Sports Centre	230 per hectare	8 adult viviparous lizards	0.3 adults	Low
Richborough Port	200 per hectare	2 adult viviparous lizards	0.1 adults	Low

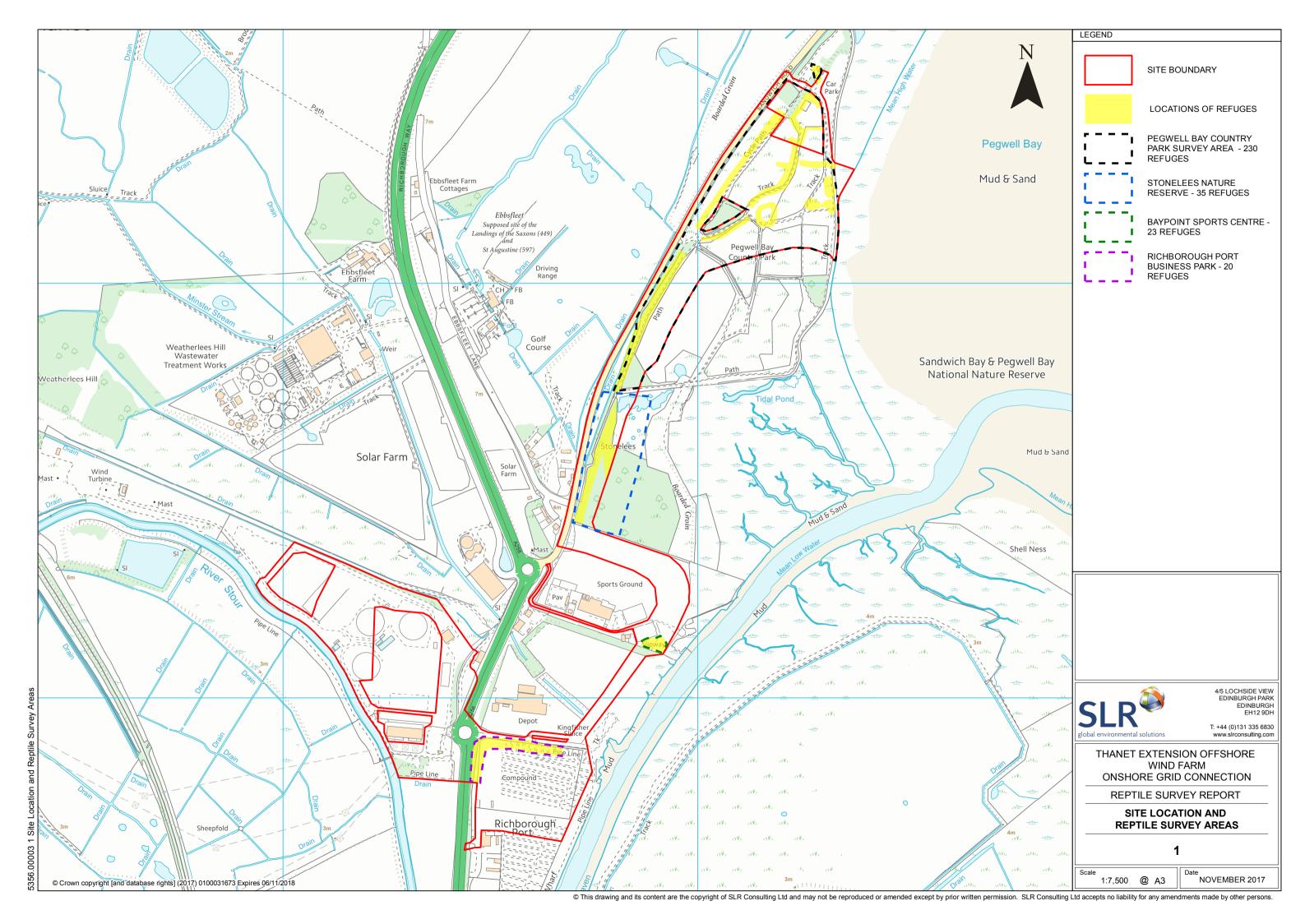
Additional survey visits would enable a greater level of confidence in the scores, although given that all of the peak counts are well below the thresholds for the next population size class up it is considered unlikely that additional survey visits would alter the classification assigned to each area.

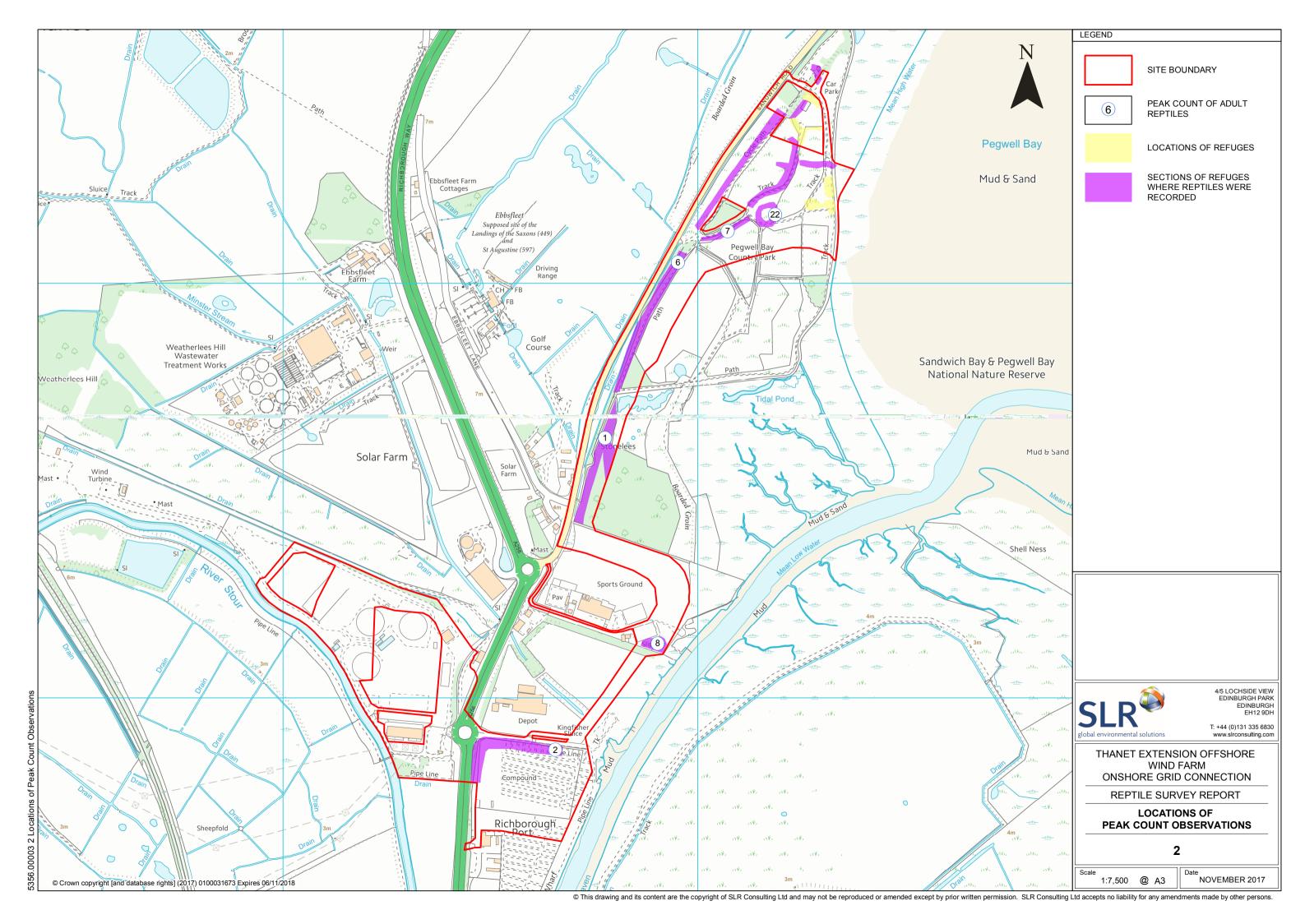
DRAWINGS

Drawing 1: Site Location and Reptile Survey Areas

Drawing 2: Locations of Peak Count Observations







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