

Rampion 2 Wind Farm

Category 6:

Environmental Statement

Volume 4, Appendix 22.12: Reptile

survey



Document revisions

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1. Introduction

1.1 Background

- This Appendix should be read in conjunction with Chapter 22: Terrestrial ecology and nature conservation, Volume 2 (Document Reference: 6.2.22) of the Environmental Statement (ES) which is provided in support of the delivery of an Environmental Impact Assessment (EIA) associated with the Rampion 2 Offshore Wind Farm, hereafter referred to as the "Proposed Development" or "Rampion 2".
- This Appendix describes the survey method and summarises the results of a reptile survey undertaken in 2021.

1.2 Legislation

- Four-widespread species of reptile that are native to Britain, namely viviparous lizard (*Zootoca vivipara*), slow worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix natrix*), are listed on Schedule 5 of the *Wildlife and Countryside Act 1981 (as amended)* and are afforded limited protection under Section 9 of this Act. This makes it an offence, inter alia, to:
 - Intentionally kill or injure any of these species.
- In addition, the rarer reptile species of smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*) are designated and protected as European Protected Species (EPS). EPS are protected under The *Conservation of Habitats and Species Regulations 2017*, which makes it an offence to:
 - deliberately kill, injure, disturb or capture them;
 - deliberately take or destroy their eggs;
 - damage or destroy their breeding sites and resting places; or
 - possess, control or transport them (alive or dead).

1.3 Structure of this Appendix

- 1.3.1 This Appendix is structured as follows:
 - Section 2: Methods;
 - Section 3: Results;
 - Section 4: Summary;
 - Section 5: Glossary of terms and abbreviations;
 - Section 6: References:



- Annex A: Figures; and
- Annex B: Survey weather conditions.



2. Methods

2.1 Defining survey scope

- 2.1.1 The methods to establish a baseline for reptiles comprised the following:
 - desk study of reptile records;
 - field based scoping of suitable reptile habitat, refugia deployment; and
 - reptile presence / absence survey.
- In line with good practice guidelines (Froglife, 1999), reptile surveys focused on those areas where reptiles could be significantly affected by the Proposed Development, or for which the Proposed Development could result in the contravention of relevant legislation, and that therefore required more detailed assessment.
- The areas where reptiles could be significantly affected are at the locations of permanent above ground infrastructure namely the onshore substation at Oakendene and the connection to the existing National Grid Bolney substation. These areas are referred to in this appendix as the North and South Survey Areas respectively.

2.2 Desk study

To inform the reptile survey, a desk study was undertaken to aid survey design (see Appendix 22.2: Terrestrial ecology desk study, Volume 4 of the ES (Document Reference 6.4.22.2)). The desk study requested all herptile records held by Sussex Biological Records Centre (SxBRC) up to 5km from the proposed Development Consent Order (DCO) Order Limits as defined in Chapter 4: The Proposed Development, Volume 2 of the ES (Document Reference 6.2.4).

2.3 Field surveys

Habitat scoping and refugia deployment

- 2.3.1 Within **Appendix 22.12: Reptile survey**, the following areas are referred to:
 - "North Survey Area" represents the onshore substation location at Oakendene.
 This area comprises mostly arable fields with suitable reptile habitat predominantly located along the rough grassland margins between fields;
 - "South Survey Area" represents the connection point to the existing National Grid Bolney substation. The area surveyed was the habitat most suitable for reptiles in the vicinity of the connection works.
- 2.3.2 These areas are shown in **Figure 22.12.1a and b** (**Annex A**).



- 2.3.3 Reptile surveys were not conducted in areas along the cable route as the extent of temporary habitat loss (at a given point) is such that the risk to reptiles can be effectively managed (see **Outline Code of Construction Practice** (Document Reference 7.2)).
- 2.3.4 Habitat suitable to support reptiles within the North Survey Area and South Survey Area comprised of rough grassland, scrub and tall ruderal vegetation connected by a matrix of ditches / waterways and hedgerows (**Table 2-1**).
- An initial site visit was undertaken by an experienced ecologist on 18 August 2021 in the South Survey Area and 26 August 2021 in the North Survey Area to determine the best access routes and the most suitable locations for deploying artificial refugia.
- Artificial refugia of two types were deployed in late August 2021 comprising of bitumen felt, or "felts", measuring 500mm x 1,000mm and corrugated metal sheets, or "tins", measuring 500mm x 1,000mm. As per the guidance (Froglife, 2015), a combination of both refugia types is used due to their use by reptiles at different temperature ranges.
- A total of 147 artificial refugia (comprised of 110 felts and 37 tins) were set out in the South Survey Area within all areas of suitable reptile habitat. A total of 42 artificial refugia (22 felts and 20 tins) were set out in the North Survey Area within all areas of suitable reptile habitat (see **Figure 22.12.2a and b, Annex A** for locations of felt and tin deployment).
- The two survey areas, and details of refugia deployment in each, are described in **Table 2-1.** As indicated, the density of refugia deployment exceeded the minimum recommended density of 5-10 refugia per hectare (Froglife, 2015), thereby maximising the opportunity to detect reptiles.

Table 2-1 Survey area descriptions and detail of refugia deployed

Survey Area	Description of Survey Area	Total refugia deployed	Average number of refugia per hectare (ha)
North	Approximately 3.5ha of poor semi-improved and improved grassland, scattered mature broadleaved trees and hedgerows bordered by arable, dense continuous scrub, broadleaved woodland, waterbodies and streams.	22 felts and 20 tins	12
South	Approximately 9.8ha of bare ground, tall ruderal, semi-improved and improved	110 felts and 37 tins	15



Survey Area	Description of Survey Area	Total refugia deployed	Average number of refugia per hectare (ha)
	grassland with scattered and dense scrub bordered by broadleaved woodland, hedgerows and waterbodies.		

Reptile presence / absence survey

- After allowing two weeks for the refugia to "bed-in" in suitable habitat that could be utilised by reptiles for commuting, basking, sheltering, breeding and hibernating, seven survey visits were undertaken in appropriate weather conditions between 6 September and 21 October 2021 (see **Annex B**). Seven survey visits are considered optimal for determining presence / likely absence of reptiles only, but not determining population size or the distribution of each species (Froglife, 2015).
- In accordance with good practice methodology (Froglife, 2015), the reptile survey included a combination of inspections on top of and below the artificial refugia which are designed to entice reptiles out to bask and shelter, searches of any existing refugia (such as log piles) and visual searches of other suitable basking sites. All survey visits were undertaken in September and October 2021 (see Table 3-1 for dates of survey visits) due to limited access (see Section 3.3 Survey limitations). All species, their age, gender and numbers were recorded on every survey visit.

Weather conditions

- Reptile activity is highly dependent on the weather, as reptiles must bask in order to warm themselves and become active. April, May and September are key months for basking reptiles, as more continuous mid-summer heat means reptiles require less basking time to become active, however successful surveys may still be carried out from June to August and in October if weather conditions are suitable.
- The influence of weather on reptile detection is complex and may vary depending on the target species (for example, different species have different optimal body temperatures), the time of year (whether early or late in the survey season), the prevailing weather conditions in the weeks prior to the survey, and the geographic location in which the survey is being carried out (for example, which region of the UK). In general, guidance suggests that reptile surveys should ideally be conducted on warm, dry days with intermittent sunshine; particularly after a spell of cooler or wetter weather. Various publications suggest optimal temperatures for detecting reptiles, with the figures quoted ranging between 9°C to 20°C (Froglife, 1999, Griffiths and Inns, 1998, Froglife, 2015) although the Joint Nature Conservation Committee (JNCC) recommend a minimum of 15°C (JNCC, 2004).



Outside of these conditions weather may still be suitable for surveying (for example, surveys during light summer showers interspersed with sunny spells can be very productive). As such, while survey visits were conducted as far as was practically possible in optimum conditions, an element of professional judgement was applied by the experienced surveyor leading the survey work as to what constituted suitable conditions.



3. Results

3.1 Survey results

The desk study returned 537 records of reptiles within 5km of the proposed DCO Order Limits. These are summarised in **Table 3-1** and shown on **Figure 22.12.3a to c, Annex A**.

Table 3-1 Records of reptiles returned by SxBRC

Species	No. of records	Number of individuals recorded	Date of most recent record	Distance and direction of nearest record to the proposed DCO Order Limits
Grass snake	113	154	13 September 2022	0.3km west
Adder	61	99	26 September 2022	0.4km north
Viviparous Lizard	135	310	18 August 2022	0.1km north
Slow worm	224	821	19 October 2022	0.1km east
Sand Lizard	4	4	18 April 2019	0.1km northwest

- A subset of these for the North Survey Area and South Survey Area to 2km are shown below in **Table 3-2** and in **Figure 22.12.4** (**Annex A**).
- A total of eight records were provided by SxBRC within 2km of the Survey Areas, four records of slow worm, three of grass snake and a single record of viviparous lizard.

Table 3-2 North and South Survey Areas desk study results to 2km

Species	No. of records	Date range of records	Distance and direction of nearest record to the North Survey Area	Distance and direction of nearest record to the South Survey Area
Grass snake	3	2014-2017	No records within 2km	0.9km south



Slow worm	4	2019-2022	1.4km west	1.9km south
Viviparous lizard	1	2015	No records within 2km	1.8km southeast

- The reptile presence / absence survey was conducted between 6 September 2021 and 21 October 2021.
- Two species of reptile including grass snake and slow worm were recorded, with no observations of viviparous lizard or adder on any of the survey visits at either Survey Area.
- Results of the seven visits at the North Survey Area are shown in **Table 3-3** and **Figure 22.12.5a**, **Annex A**. The results for the South Survey Area are shown in **Table 3-4** and **Figure 22.12.5b**, **Annex A**. The weather conditions during each survey visit are provided in **Annex B**.

Table 3-3 North Survey Area reptile survey results

Visit number	Date	Reptiles	Reptiles recorded		count eptiles
		Slow worm	Grass snake	Slow worm	Grass snake
1	10 September 2021	5 (4 female, 1 male)	0	5	0
2	16 September 2021	3 (1 female, 2 subadults)	1 (female)	1	1
3	20 September 2021	0	2 (1 male, 1 subadult)	0	1
4	22 September 2021	1 (male)	1 (male),	1	1
5	24 September 2021	0	1 (male)	0	1
6	18 October 2021	1 (female)	0	1	0
7	21 October 2021	No reptile	s recorded		0



Table 3-4 South Survey Area reptile survey results

Visit number	Date	Reptiles	Reptiles recorded		Total count adult reptiles	
		Slow worm	Grass snake	Slow worm	Grass snake	
1	06 September 2021	0	1 (juvenile)	0	0	
2	10 September 2021	No reptile	es recorded	(0	
3	16 September 2021	No reptiles recorded		(0	
4	20 September 2021	No reptiles recorded		(0	
5	22 September 2021	er 2021 No reptiles recorded		(0	
6	24 September 2021	No reptiles recorded		(0	
7	21 October 2021	No reptiles recorded			0	

3.2 Incidental records

In addition to the formal survey results (see **Section 3.1 Survey results**), incidental sightings were also recorded by surveyors while conducting other ecological surveys within the proposed DCO Order Limits and surrounding 100m buffer. These findings are presented in **Table 3-5**.

Table 3-5 Incidental records

Species	Date	National grid reference (NGR)	Distance and direction of nearest incidental record to the proposed DCO Order Limits
Viviparous lizard	04 September 2021	TQ089110	Within proposed DCO Order Limits
Viviparous lizard	07 August 2020	TQ013025	<0.1km west
Slow worm	26 October 2021	TQ016032	<0.1km west
Grass snake	22 June 2021	TQ029065	1.5km northeast



3.3 Survey limitations

Due to land access restrictions, land access was only permitted from 18 August 2021 in the South Survey Area and 26 August 2021 in the North Survey Area. This focused the survey effort into the late summer/autumn period. However, this is not considered to have affected the survey results.



4. Summary

- The presence / absence reptile survey provided records of both slow worm and grass snake in the North Survey Area with grass snake only in the South Survey Area. A maximum count of five adult slow worm and one adult grass snake was recorded in the North Survey Area with a maximum count of one juvenile grass snake recorded in the South Survey Area.
- Desk study results show that slow worm, is the only reptile to occur within 2km of both Survey Areas, in low numbers. Grass snake and viviparous lizard also occur within 2km of the South Survey Area only, in low numbers.
- Incidental records of viviparous lizard were made within the proposed DCO Order Limits, with slow worm, grass snake and viviparous lizard recorded within the wider area surrounding the proposed DCO Order Limits.





5. Glossary of terms and abbreviations

Table 5-1 Glossary of terms and abbreviations

Term	Definition
DCO	Development Consent Order
EIA	Environmental Impact Assessment
European Protected Species (EPS)	European Protected Species are species of plants and animals (other than birds) protected by law throughout the European Union.
ES	Environmental Statement
JNCC	Joint Nature Conservation Committee
NGR	National grid reference
Onshore	Landward of Mean High-Water Springs (MHWS)
Offshore	The sea further than two miles from the coast
SxBRC	Sussex Biological Record Centre





6. References

Froglife (1999). Reptile Survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife, Halesworth

Froglife (2015). Surveying for reptiles. Tips, techniques and skills to help you survey for reptiles. Froglife, Halesworth

Griffiths, R. and Inns, H. (1998). Surveying. In: Gent, A. H. and Gibson, S. D. eds. *Herpetofauna workers' manual*. Joint Nature Conservation Committee, Peterborough, pp1-13.

Joint Nature Conservation Committee (2004). *Common Standards Monitoring Guidance for Reptiles and Amphibians. Version February 2004.* JNCC, Peterborough.

The Conservation of Habitats and Species Regulations 2017 (SI 1012:2017). [Online] Available at: https://www.legislation.gov.uk/uksi/2017/1012/introduction/made [Accessed 31 July 2023].

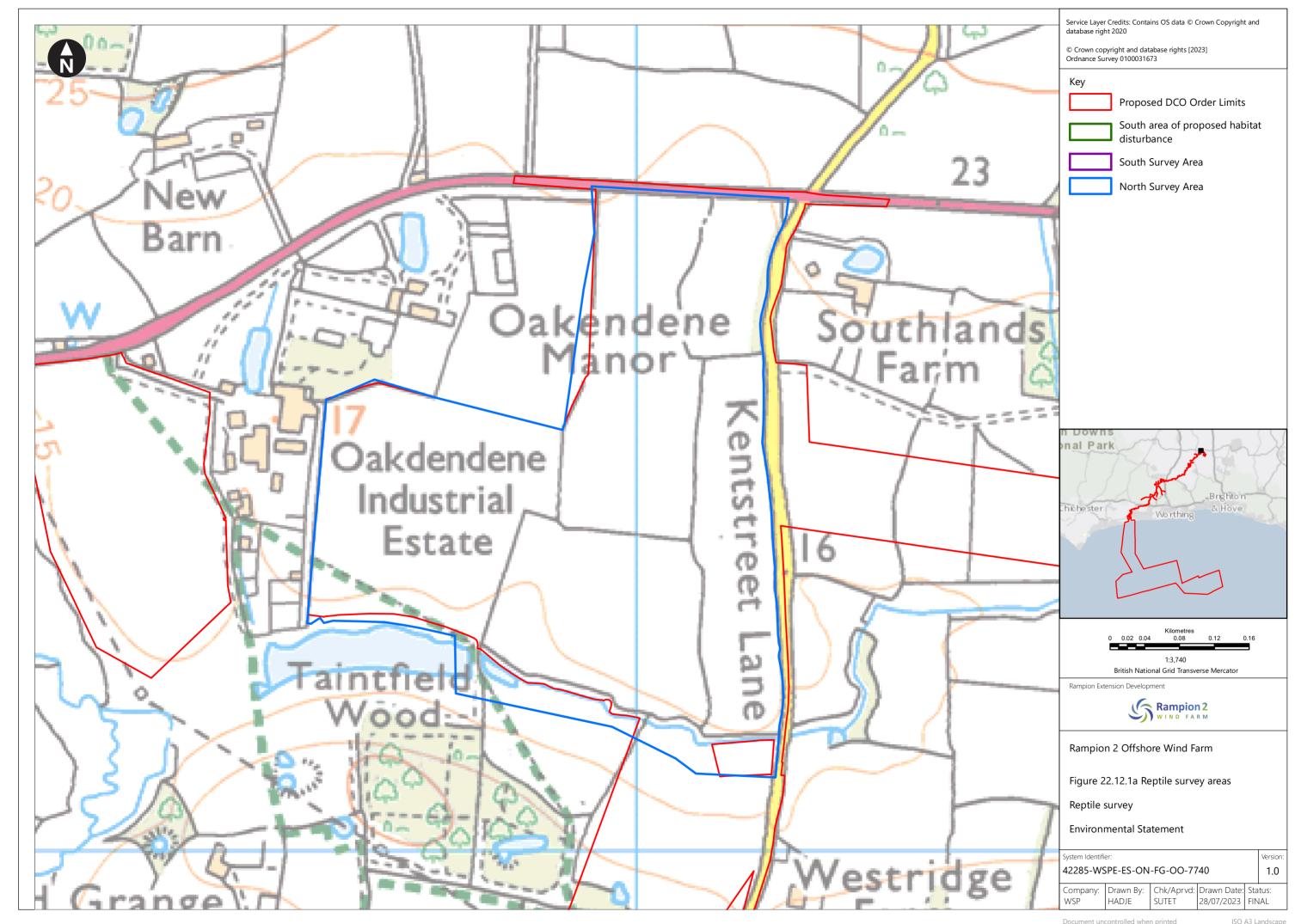
Wildlife and Countryside Act 1981. [Online] Available at: https://www.legislation.gov.uk/ukpga/1981/69/contents [Accessed 31 July 2023].

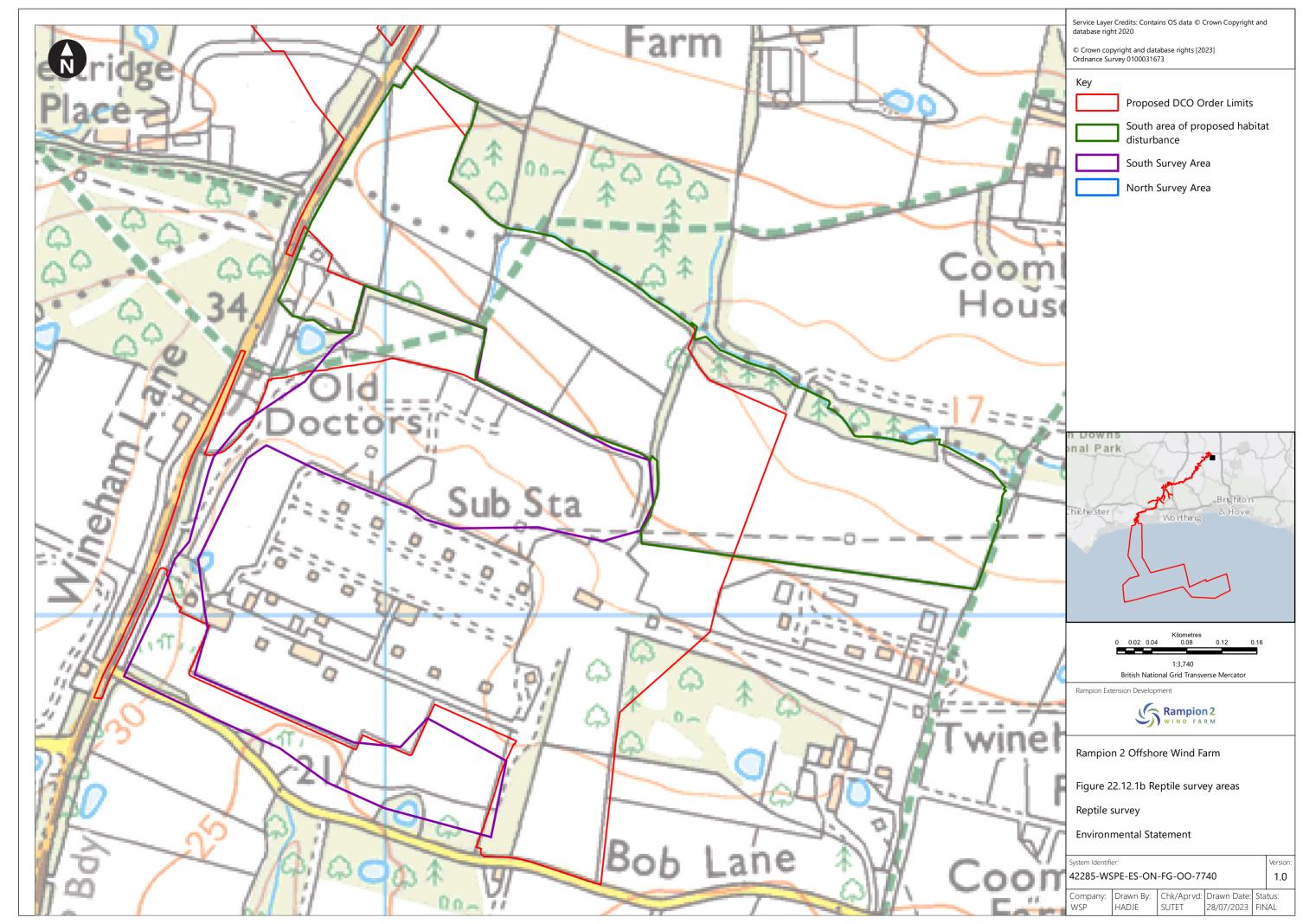


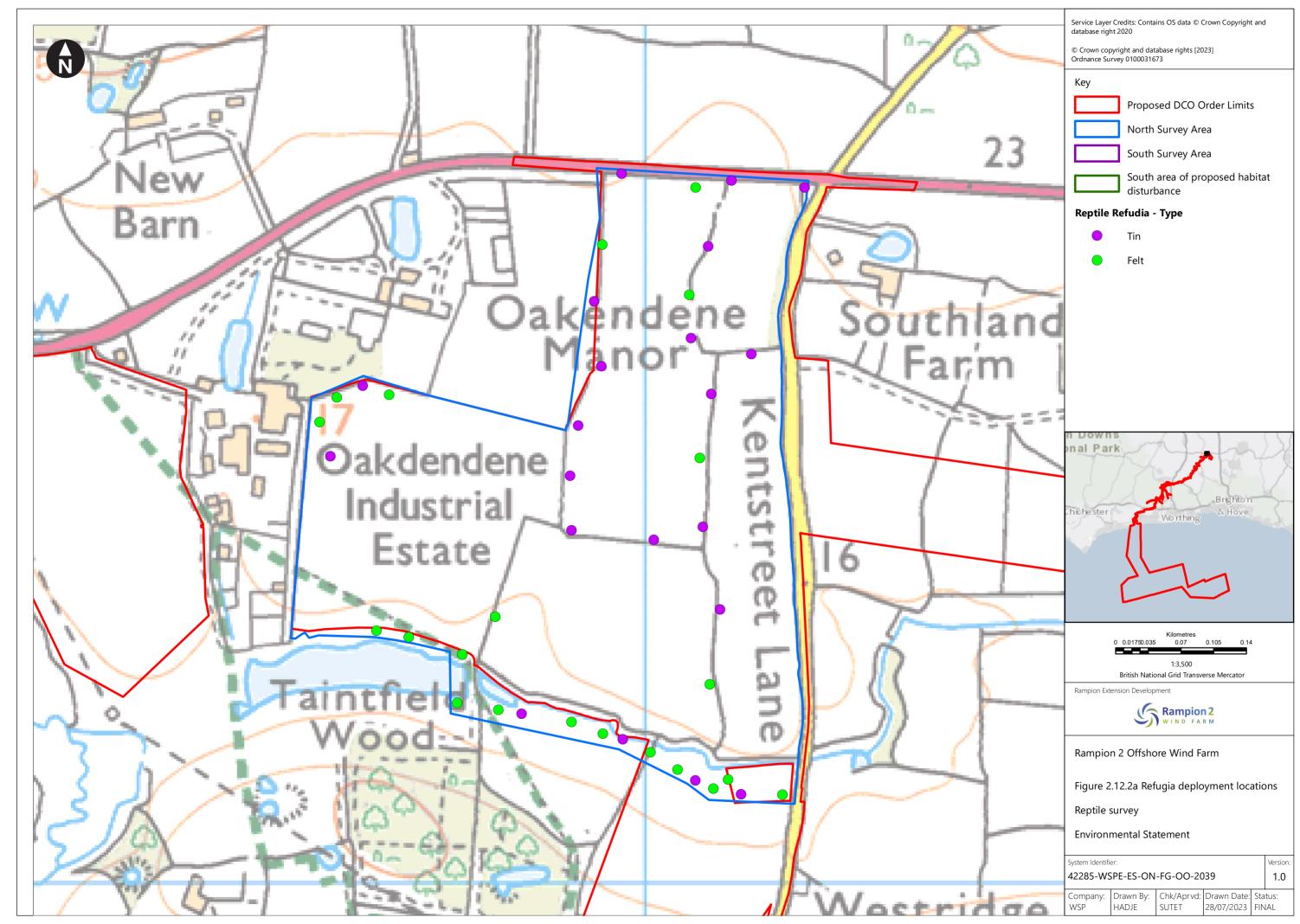


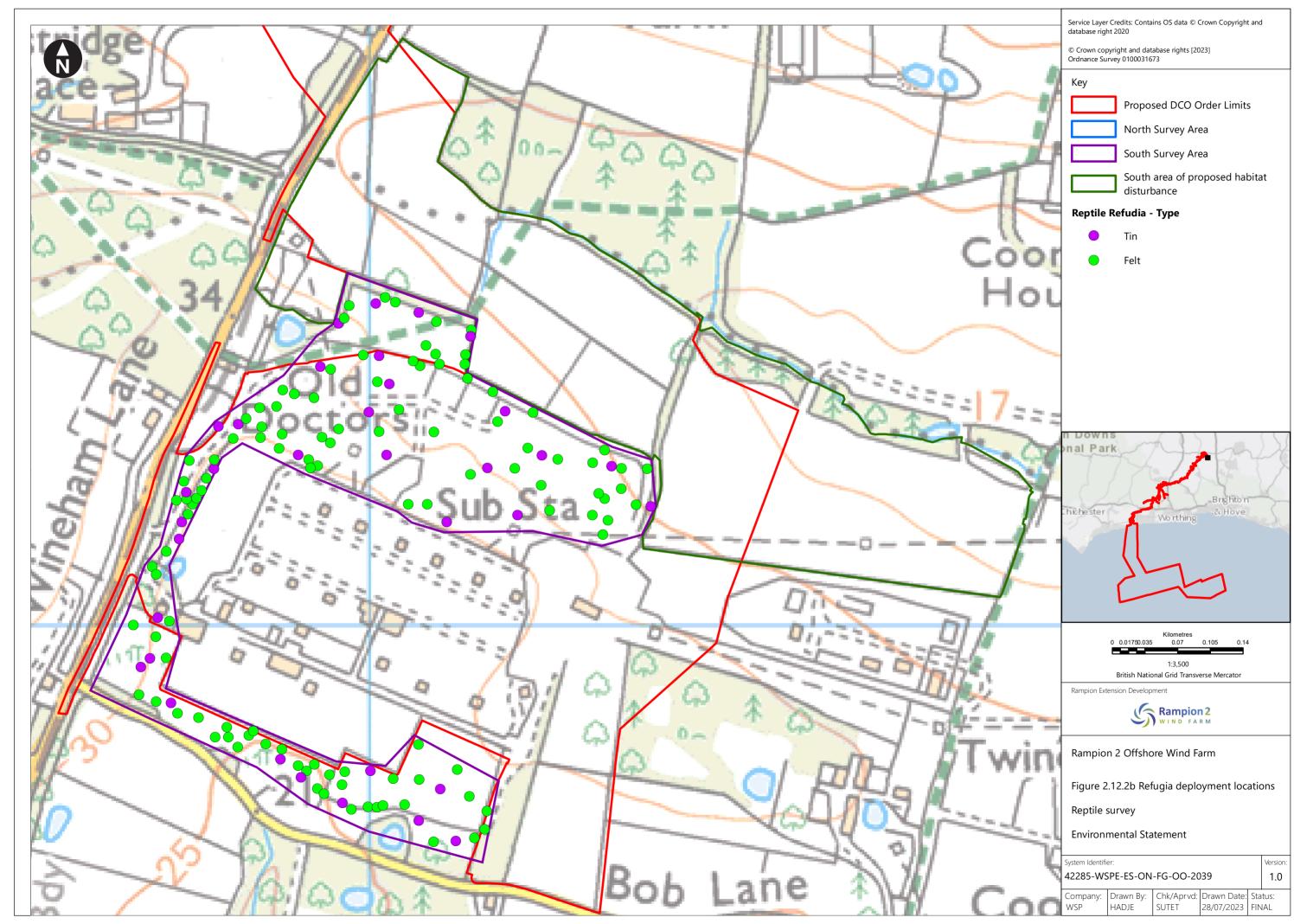
Annex A Figures

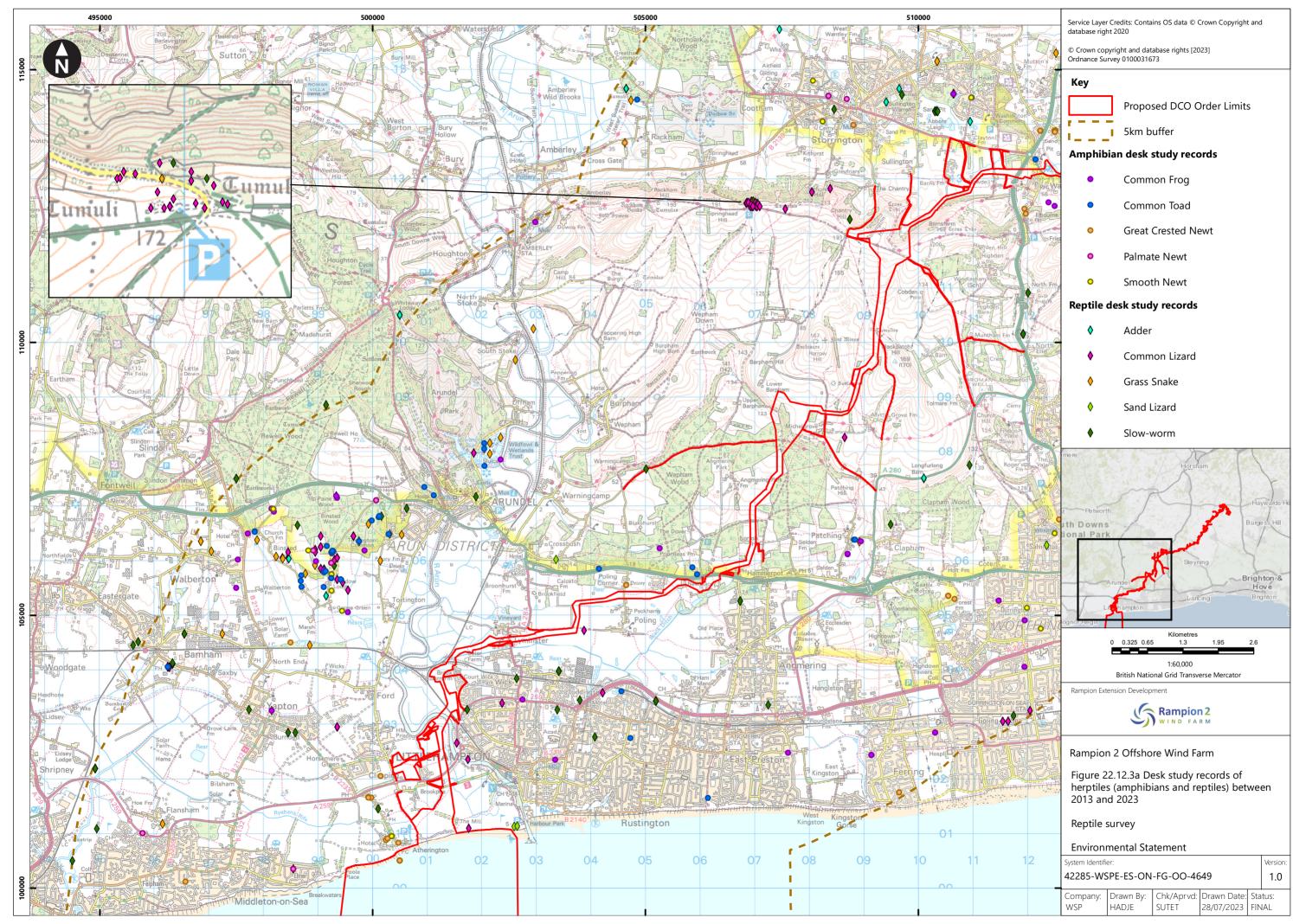


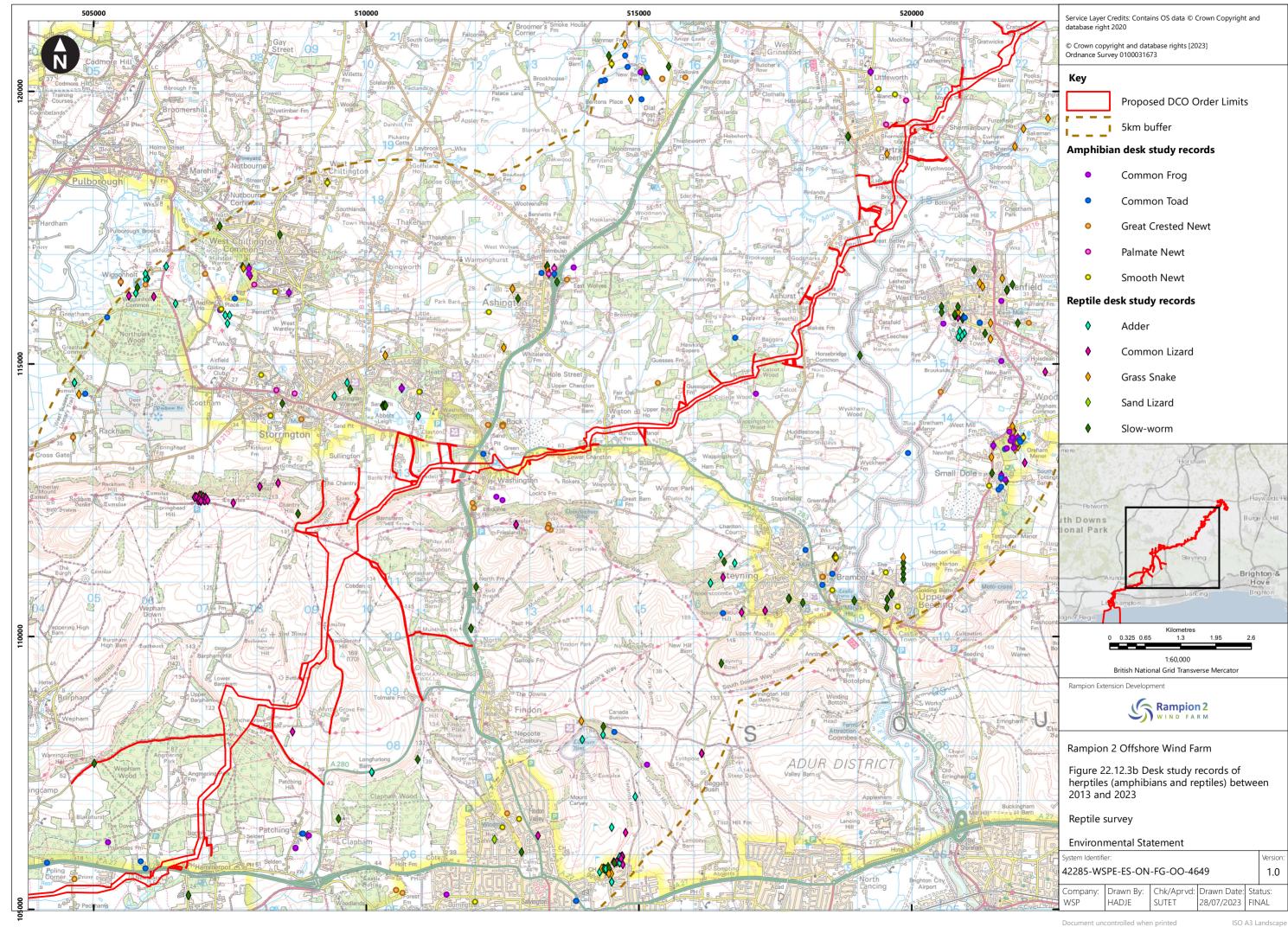


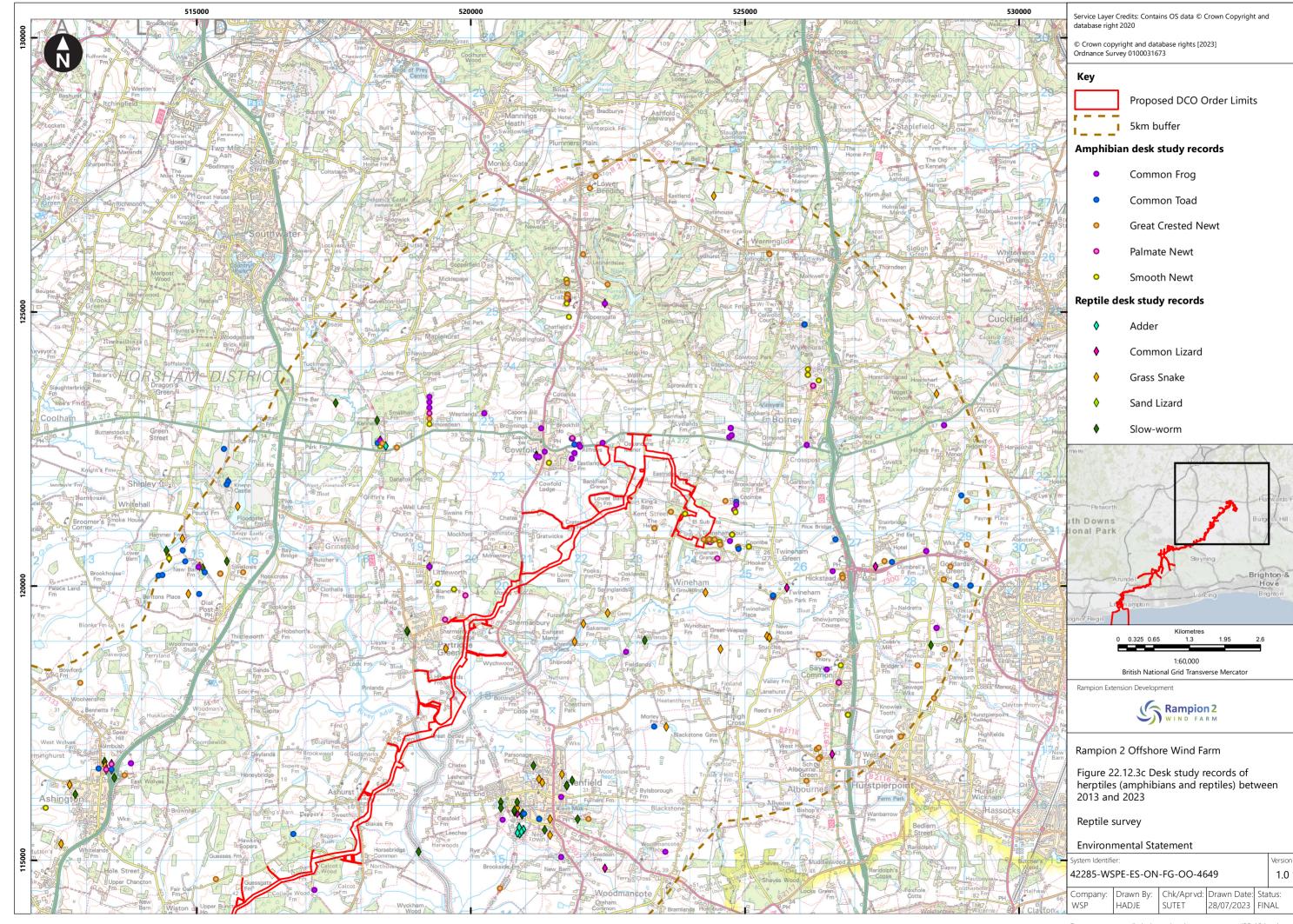


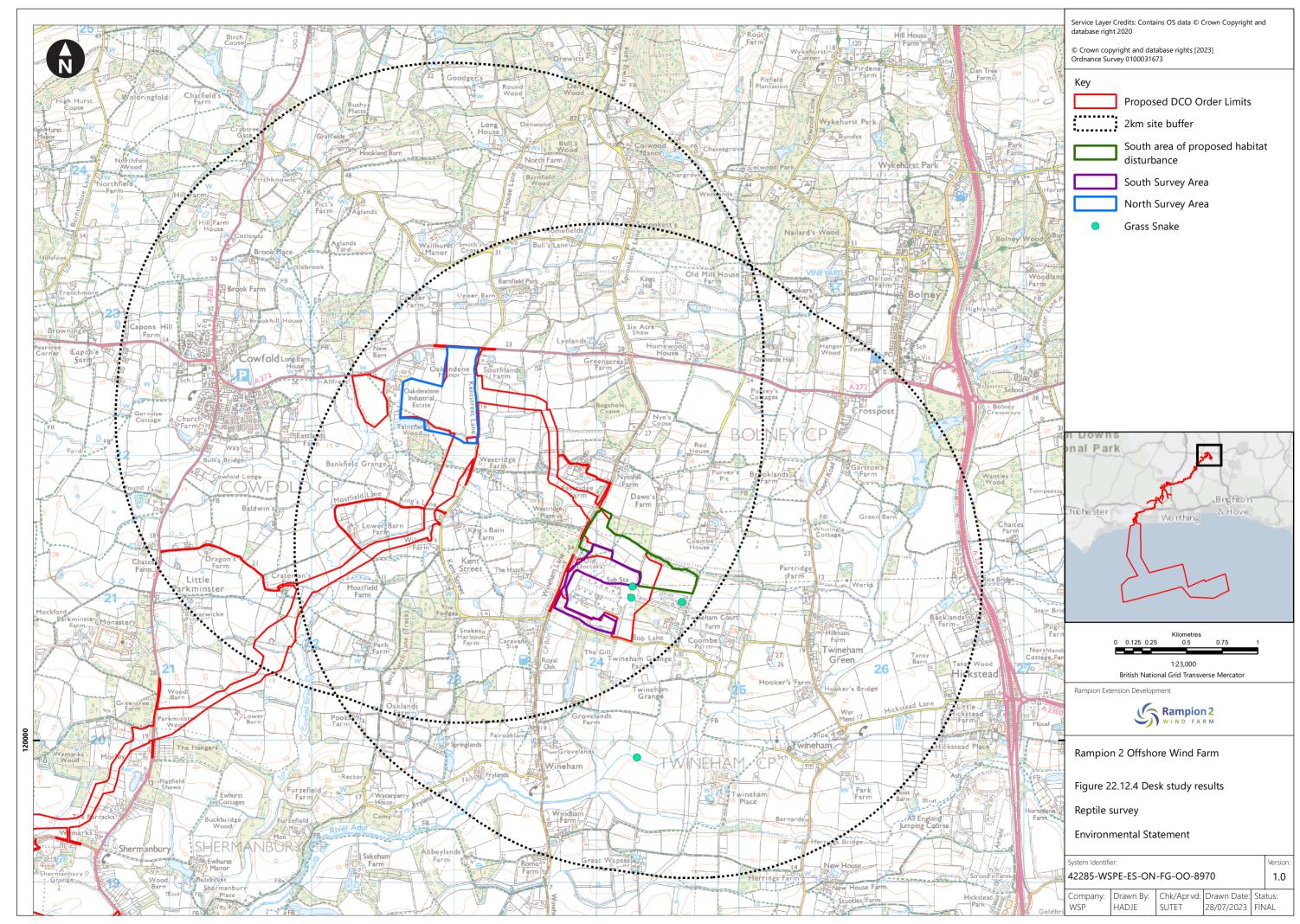


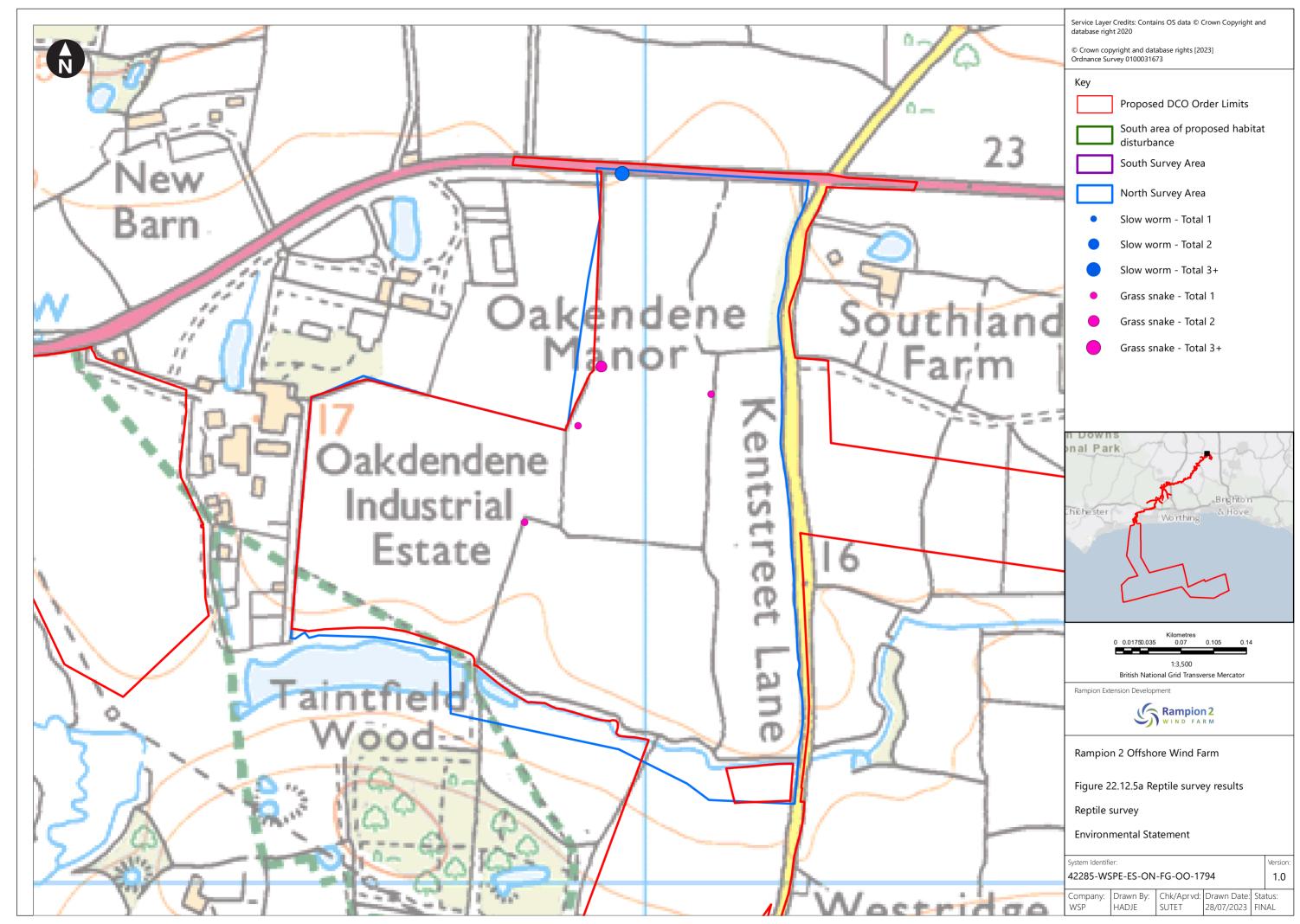


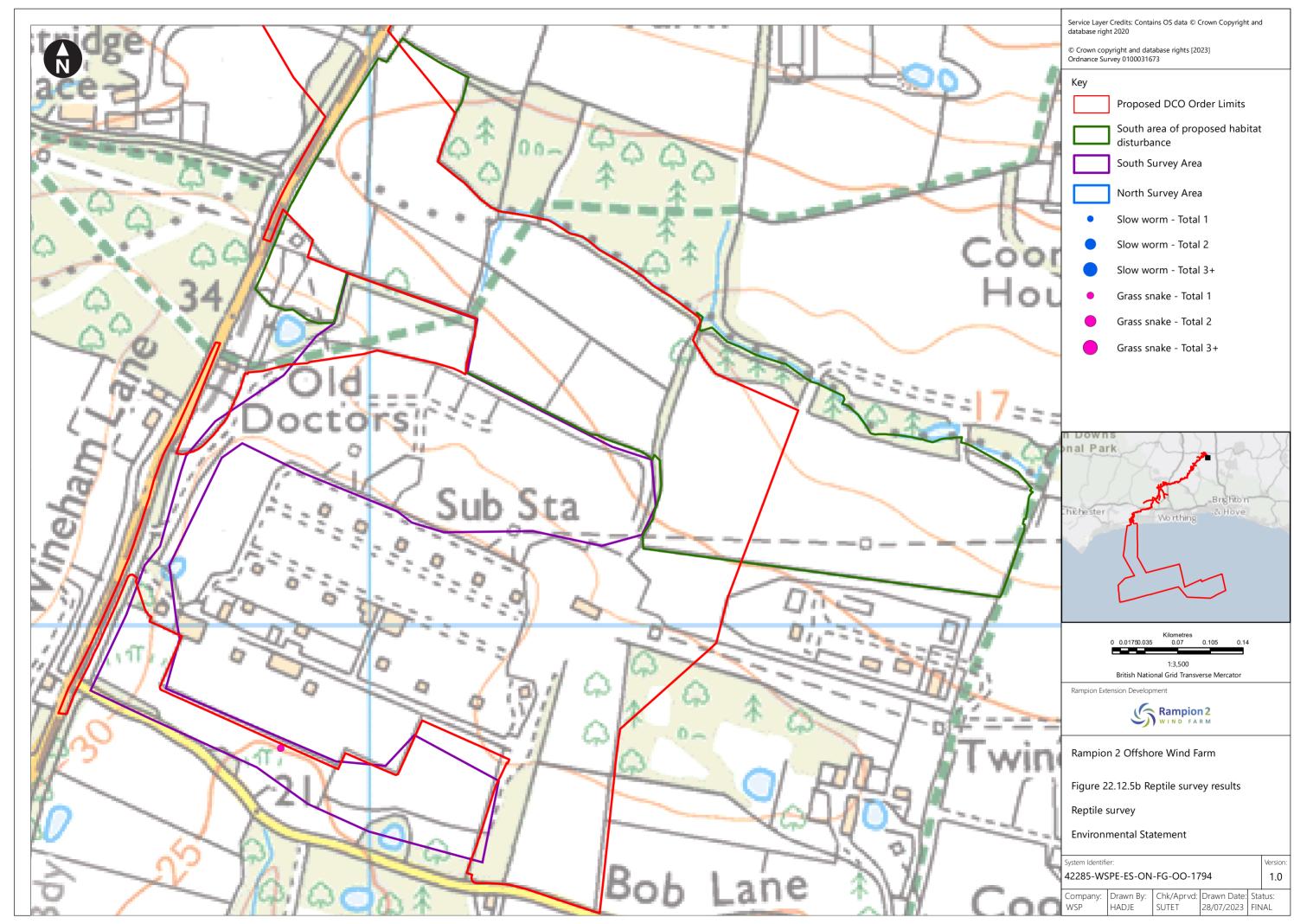














Annex B Weather conditions

Table B-1 North Survey Area dates of survey visits and weather conditions

Visit no.	Date	Time		Temperature (°C)		Rain	Cloud	Ground moisture	Wind strength
		Start	End	Min	Max		(%)		
1	10 September 2021	08:40	10:25	18.0	19.0	None	100	Damp	Calm
2	16 September 2021	09:50	11:00	16.0	17.0	None	40	Damp	Calm
3	20 September 2021	11:30	12:20	18.0	20.0	None	50	Dry	Calm
4	22 September 2021	10:30	11:15	10.0	18.0	None	10	Damp	Calm
5	24 September 2021	11:00	11:55	16.0	18.0	None	30	Dry	Calm
6	18 October 2021	11:05	11:55	15.0	16.0	None	100	Wet	Light
7	21 October 2021	13:55	15:20	12.0	14.0	None	10	Damp	Calm

Rain: None, light, occasional shower, rain. Wind strength: Calm - <3mph, Light- 4-12mph, Moderate -13-24mph, Strong - 25-31mph, Very strong - 32+ mph.



Table B-2 South Survey Area dates of survey visits and weather conditions

Visit no.	Date	Time	Time		Temperature (°C)		Cloud	Ground moisture	Wind strength
		Start	End	Min	Max		(%)		
1	06 September 2021	07:30	10:20	14.0	20.0	None	0	Damp	Calm
2	10 September 2021	06:40	08:20	16.0	17.0	None	100	Damp	Light
3	16 September 2021	08:15	09:45	12.0	15.0	None	40	Damp	Calm
4	20 September 2021	10:00	11:20	16.0	18.0	None	50	Dry	Calm
5	22 September 2021	09:00	10:25	17.0	18.0	None	10	Damp	Calm
6	24 September 2021	09:00	10:55	15.0	16.0	None	30	Dry	Calm
7	21 October 2021	12:20	13:50	12.0	15.0	None	10	Damp	Calm

Rain: None, light, occasional shower, rain. Wind strength: Calm - <3mph, Light- 4-12mph, Moderate -13-24mph, Strong - 25-31mph, Very strong - 32+ mph





