9.7 REPTILE SURVEY REPORT

ARUN DISTRICT COUNCIL BN/42/21/PL

West Sussex County Council

A29 REALIGNMENT

Reptile Survey Report

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A29 REALIGNMENT

Reptile Survey Report

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EXECUTIVE SUMMARY

WSP was commissioned by West Sussex County Council (WSCC) to undertake a reptile survey of the land associated with Phase 1 of the proposed realignment of the A29 at Eastergate, Westergate and Barnham, hereafter referred to as the 'Proposed Development'. The 'Site' is defined as the approximate maximum extent of works, to which a 30m buffer was applied to define the ecological 'Survey Area'. The reptile survey will form a suite of protected species surveys which will inform an Environmental Statement to support a detailed planning application for the Proposed Development.

The Survey Area comprises of a majority of semi-neutral grassland, bounded by hedgerows and scrub. Woodland is present in places with a well-established orchard to the west of the Survey Area. The wider landscape is characterised by a similar patchwork of villages and arable land.

The reptile survey was undertaken between April and July 2019 in accordance with good practice guidance. The results indicate 'low' populations of common lizard and slow worm. As the desk study returned grass snake records within 150m of the Site boundary, it is considered that there could be a low population of grass snakes within the Site. The Site is considered to be of Site level significance, based on the survey results, habitats present and the landscape context.

Common lizard, grass snake and slow worm are protected from intentional or reckless killing and injury under Schedule 5 of The Wildlife and Countryside Act (1981). All species of reptile are also listed as a Species of Principal Importance (SPI) for the Conservation of Biodiversity in England in accordance with Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Under Section 40 of the NERC Act (2006) public bodies, including local planning authorities have a duty to have regard for Species of Principal Importance (SPI) when carrying out their functions, including determining planning applications. Reptiles, as protected species, must also be considered in development under national and local planning policy.

Mitigation measures will be required in order to comply with legislation and planning policy and could include a reptile translocation, habitat manipulation and ecological enhancement. Further measures and recommendations will be detailed in the ecology strategy chapter of the Environmental Impact Assessment (EIA).

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1. INTRODUCTION

1.1. PROJECT BACKGROUND

1.1.1. West Sussex County Council (WSCC) propose to realign the existing A29 at Eastergate, Westergate and Barnham.

1.1.2. The realignment of the A29 is required to deliver the adopted allocation of the Barnham, Eastergate, Westergate (BEW) site during the Arun Local Plan period (2011-2031). The road realignment will be delivered in two phases due to different funding mechanisms.

1.1.3. Phase 1 would see the construction of a new single carriageway to the south of Eastergate Lane, connecting the A29 Fontwell Avenue to the B2233 Barnham Road via a new junction. The new carriageway will also feature a 3m wide cycleway and footpath, a 2.5m central island, four uncontrolled crossings and potential noise barriers. The Phase 1 works described above are hereafter referred to as the 'Proposed Development'. The location of the Proposed Development, hereafter referred to as the 'Site', is shown on Figure 1.

1.1.4. It is understood that WSCC is aiming to submit a detailed planning application for the Proposed Development, supported by an Environmental Statement.

1.1.5. Phase 2 of the proposed A29 realignment, for land south of Barnham Road, is currently in the early stages of the design process and is likely to be subject to a separate planning application.

1.2. ECOLOGICAL BACKGROUND

1.2.1. A Preliminary Ecological Appraisal (PEA) was undertaken within land up to 250m surrounding the Scheme's maximum extent of works, hereafter referred to as the 'PEA Survey Area' WSP (2018).

1.2.2. The PEA Survey Area is set within a semi-rural location amongst a series of small villages and runs through a selection of semi-natural and modified habitats, dominated by orchard in the north and west, with grassland habitats to the east and south. The wider landscape is characterised by a similar patchwork of villages and arable land. The south coast at Bognor Regis lies approximately 5km to the south, where the coastline comprises a sand and gravel intertidal zone bordered by a dense urban area. The PEA Survey Area lies within the jurisdiction of West Sussex County Council and of Arun District Council.

1.2.3. The PEA and associated desk study identified suitable habitat for several common reptile species, including plantation broadleaved woodland, orchards, hedgerows, dense scrub, tall ruderal, semi-improved neutral grassland and ephemeral short perennial habitats.

1.2.4. Three reptile species were returned from the desk study, all within the PEA Survey Area boundary; common lizard *Zootoca vivipara*, grass snake *Natrix helvetica* and slow worm *Anguis fragilis*.

1.3. BRIEF AND OBJECTIVES

1.3.1. West Sussex County Council commissioned WSP to complete a suite of reptile surveys in accordance with good practice guidance (Froglife, 1999 and Gent and Gibson, 1998) to:

- establish whether reptiles were present or likely absent from the Site;
- determine, if present, which species are present and the distribution of these species; and

- if present, evaluate the Site for reptiles and make recommendations as to how proposals should account for reptiles in relation to legislation, planning and biodiversity policy.

1.3.2. The results of this survey, and subsequent recommendations, are included within this report.

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2. METHODS

2.1. OVERVIEW

2.1.1. The reptile survey was undertaken within land approximately 30m from the Site boundary, hereafter referred to as the 'Survey Area'. This is to determine the presence or likely absence of reptile species from the Site. The survey comprised two main elements; the checking of artificial refugia and visual observation of habitats and natural refugia present. The survey comprised seven survey visits between April and July.

2.1.2. The reptile survey to determine presence/likely absence was completed with regard for guidance within the Herpetofauna Workers' Manual (1998) and the methodology within Froglife's Reptile Survey Advice Sheet 10 (1999).

2.2. REPTILE PRESENCE/LIKELY ABSENCE SURVEY

2.2.1. The survey comprised seven survey visits to the Site, each incorporating two elements:

- survey of artificial refugia; and
- visual observation of habitats and natural refugia present.

2.2.2. One hundred and twenty refugia[1] were installed within suitable habitat for reptiles present within the Survey Area on the 15 April 2019 and allowed to bed down for 10 days prior to the beginning of the survey visits.

2.2.3. A mixture of materials sized approximately 0.5m x 0.5m or 0.5m x 1m were used as artificial refugia, these included bitumen felt, corrugated metal and corrugated bitumen. Refugia were sited in suitable basking spots, close to cover, within habitat parcels identified to provide suitable conditions for reptiles during an initial site walkover.

2.2.4. Suitable reptile habitat totalled approximately 14 hectares (see Figure 2). Calculated as the total suitable habitat within the Survey Area, excluding the orchard and plantation woodland. By using 120 refugia (giving approximately 8.5 refugia/ha) the density exceeded the minimum density as recommended by good practice guidance (Froglife, 1999). This guidance states the number of tins used '*will depend on many factors, such as likelihood of disturbance, size of site and what the survey is attempting to achieve*' and recommends a minimum of 5-10 refugia per hectare for 'general survey purposes'.

2.2.5. Reptiles are ectothermic animals, deriving their body heat from the external environment. Therefore, the timing of the survey visits was dictated by weather conditions. All surveys were completed within the appropriate season (March to October) and within the appropriate ambient air temperature range (10-18^{0}C). As far as possible, surveys were undertaken on sunny days with low cloud cover and little wind to maximise the probability of recording reptiles, should they be present; where ambient air temperatures were towards the upper end of the temperature range, days of higher cloud cover were targeted.

[1] Artificial refugia are used to assist with the detection of reptiles within suitable habitat. The materials warm up and retain heat, and therefore are attractive to basking reptiles. The settling in period allows favourable conditions i.e. suitable humidity and temperature gradient to develop and for reptiles present within the habitat to become aware of the refugia.

2.3. DATES OF SURVEY AND PERSONNEL

2.3.1. The reptile survey was completed by competent surveyors with at least two years' experience of ecological survey, including extensive reptile survey experience enabling them to develop a strong understanding of the ecology of native reptile species.

2.3.2. Surveys were completed on the dates below; weather conditions are listed in Appendix A.

1. 25 April 2019
2. 23 May 2019
3. 30 May 2019
4. 04 June 2019
5. 11 June 2019
6. 24 June 2019
7. 09 July 2019

2.4. EVALUATION

2.4.1. The value of the Site for reptiles was evaluated using the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance (CIEEM, 2018). This guidance recommends that the evaluation is made with reference to a geographical frame of reference as follows:

- International and European;
- National (England);
- Regional (South-East England);
- Metropolitan, County (West Sussex), vice county or other local authority-wide area;
- Local (Chichester); and
- Application Site (Survey Area).

2.4.2. Froglife guidance (1999) was used to inform the population size class estimates. However, due to certain limitations of the guidance, which does not include consideration of variables such as site size, whether both visual observation and refugia survey contribute to peak counts and individual reptile species ecology, professional judgement has been applied to avoid misinterpretation of data.

2.5. NOTES AND LIMITATIONS

2.5.1. Over the course of the surveys, some refugia became covered by vegetation and could not be located. Some, if located were moved to an alternative location or placed again on top of the vegetation. As this only affected up to 10% of the refugia during any one survey, this is not considered to place limitations upon interpretation of the survey results, as the refugia density still exceeded the minimum of five refugia per hectare.

2.5.2. During the last survey, the maximum temperature exceeded the maximum recommended survey temperature of 18 ºC. As the temperature was only one degree above the recommended range (19ºC), and the survey yielded the maximum peak count for slow worm, it is not considered that this presents a limitation to the robustness of the results.

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3. RESULTS AND EVALUATION

3.1. DESK STUDY

3.1.1. The desk study returned 42 records of slow worm, 31 records of common lizard and nine records of grass snake. The nearest records for all three of these species were located 150m south east of the Site in Brooks Nursery. These records are displayed on Figure 2.

3.2. RESULTS OF REPTILE SURVEY

3.2.1. Slow worm was the only species of reptile recorded during the presence/likely absence surveys. One common lizard was incidentally reported during the survey. No grass snakes were recorded during the survey, however, due to the large amount of natural refugia present within the Site and the proximity of desk study records, it is likely there is a low population present not captured by the survey effort.

3.2.2. No other reptile species were recorded during the survey and therefore, other species (adder *Vipera berus*, smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis*) are likely absent from the Site. Habitat present is not suitable for the latter two species, smooth snake and sand lizard.

3.2.3. Weather conditions during surveys ranged between 11 ^{0}C and 19 ^{0}C in temperature, with cloud cover of between 2 and 8 oktas; full details are included in Appendix A.

Table 1: Summary of Survey Results

Survey visit	Common Lizard		Slow Worm	
	Juvenile/ sub-adult count	Adult count	Juvenile/ sub-adult count	Adult count
1	-	-	-	1
2	-	-	-	1
3	-	-	-	-
4	-	-	-	-
5	-	-	-	1
6	-	-	-	-
7	-	-	-	2
Incidental		1		
Maximum adult count	1		2	

3.3. EVALUATION OF THE SITE FOR REPTILES

3.3.1. Common lizard and slow worm are both national Species of Principal Importance (SPI), and receive partial protection under the Wildlife and Countryside Act 1981 (as amended). Both species have undergone declines nationally, largely due to habitat loss and degradation, although they are generally common and widespread within the south of England itself, where the Site lies.

3.3.2. Based on published guidance (Froglife, 1999), the populations of common lizard and slow worm at the Site are both 'Low'. Due to the close proximity of the desk study records, it is also considered that there is a 'Low' population of grass snakes.

3.3.3. Habitats within the Site are moderately suitable for reptiles, especially within the western part of the Site, but are immediately bounded by roads and arable fields (lower quality habitat) which restrict connectivity to the wider landscape.

3.3.4. There are large parcels of semi-neutral grassland within the Site that provide ample summer basking and foraging opportunities for reptiles, whilst the roots of mature trees within woodland, orchard and hedgerows may provide hibernation opportunities.

3.3.5. Overall, based on the results and context of the Site, it is considered to be of value at a site level for reptiles (common lizard, slow worm and grass snake).

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4. IMPLICATIONS FOR DEVELOPMENT

4.1. OVERVIEW

4.1.1. Reptiles are protected from killing and injury under UK legislation; in addition, planning policy affords further protection within the planning system, as described below. As a low population of common lizard and slow worm has been confirmed to be present within the Site and the potential presence of grass snake, it will be necessary to adopt appropriate avoidance and, or mitigation measures as part of the Proposed Works, see Section 6.

4.2. LEGAL COMPLIANCE

4.2.1. Native, widespread reptile species (common or viviparous lizard, adder, grass snake and slow worm) are partially protected under Schedule 5 of The Wildlife and Countryside Act (1981), under part of Section 9(1) and all of Section 9(5). As such it is an offence to:

- '*Intentionally or recklessly kill or injure' an individual of these species; or*
- *'Sell, offer or expose for sale, or [have in] possession or transport for the purpose of sale, any live or dead [individual] or any part of, or anything derived from' an individual of these species'.*

4.2.2. All species of reptile are also listed as a Species of Principal Importance (SPI) for the Conservation of Biodiversity in England in accordance with Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Under Section 40 of the NERC Act (2006) public bodies, including local planning authorities have a duty to have regard for SPI when carrying out their functions, including determining planning applications.

4.2.3. As common lizard and slow worm have been confirmed to be present within the Site and grass snake are also likely present, it will be necessary to adopt appropriate avoidance and, or mitigation measures as part of the Proposed Development to minimise the risk of an offence under the legislation protecting reptiles.

4.3. PLANNING POLICY COMPLIANCE

4.3.1. At a national context planning policy is driven by the National Planning Policy Framework (NPPF) (2019). NPPF Section 15 *Conserving and enhancing the natural environment* states:

- Planning policies and decisions should contribute to and enhance the natural and local environment by:
  - *a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan) …;*
  - *b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits …. of trees and woodland…; and*
  - *d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.'*
- To protect and enhance biodiversity and geodiversity, plans should*:*

- *'a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation…; and*
- *b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.'*

- When determining planning applications, local planning authorities should apply the following principle; '*if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refuse.'*

LOCAL PLANNING POLICY

4.3.2. The West Sussex Transport Plan (2011) was subject to a Strategic Environmental Assessment (SEA) at the time of publishing which identified that;

- '*Mitigation is required to avoid negative impacts on biodiversity. This will include using green infrastructure to improve the connectivity of hedge lines to reconnect habitats, for example a 'Notable Verge' strategy is already in place; and*
- *The impact of the [Local Transport Plan] is dependent on taking opportunities to improve green infrastructure, particularly in new development, and in the [South Downs National Park] where existing green infrastructure can be disjointed.'*

4.3.3. Whilst the West Sussex Structure Plan (WSCC, 2005) has no formal status, it states '*Though the Plan has no formal status in the current planning system, it remains our strategic policy statement for future development and land-use planning*'. Policy ERA2 relates to Nature Conservation, stating;

- *'(a) Development should not be permitted unless the wide range of habitats, species and geological features of the County will be protected, conserved and, where possible, enhanced particularly through long-term management mechanisms and habitat creation schemes. A particularly high level of protection should be afforded to sites and features of national and international importance. Proposals for the extension or creation of new habitats should be permitted provided that they are consistent with wider environmental objectives.*
- *(b) Local plans will include policies to:*

  (1) ensure that site evaluation is undertaken to establish the nature conservation importance of proposed development sites;

  (2) protect sites or features of nature conservation importance, including those protected under legislation and prevent development unless there are no alternative solutions and there are overriding reasons which outweigh the need to safeguard the value of sites or features;

  (3) ensure that where development would result in the loss of an important nature conservation resource, a new resource is provided which is of at least equivalent value, where possible;

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(4) where appropriate, secure the restoration, creation and management of habitats through development proposals; and

(5) where necessary, ensure the investigation and recording of sites and features of nature conservation importance, and, where appropriate, the preservation of any finds.'

4.3.4. The Adopted Arun Local Plan (Arun DC, 2018) contains a number of policies relating to biodiversity, of which Policy ENV SP1 Natural Environment and Policy ENV DM5 Development and Biodiversity are the most pertinent.

4.3.5. Policy ENV SP1, Natural Environment states;

- '*Arun District Council will encourage and promote the preservation, restoration and enhancement of biodiversity and the natural environment through the development process and particularly through policies for the protection of both designated and non-designated sites. Where possible it shall also promote the creation of new areas for habitats and species. In relation to designated sites, development will be permitted where it protects sites listed in Tables 17.1-17.6 that are recognised for the species and habitats contained within them.'*

4.3.6. Policy ENV DM5 Development and Biodiversity states;

- '*Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not). Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement.*
- *Where there is evidence of a protected species on a proposed development site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals. All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person.*
- *All developments shall have regard to Natural England's standing advice for protected species.'*

4.3.7. National and Local Planning policies are referenced as applicable within this report.

5. RECOMMENDATIONS AND CONCLUSIONS

5.1. RECOMENDATIONS

5.1.1. In the first instance it is recommended that where possible, habitat known to support reptiles is retained within the Proposed Development designs. Although the habitat of widespread reptile species is not directly protected by law, habitat removal or alteration has potential to cause death or injury to individual reptiles which should be avoided to ensure legal compliance (see Section 5).

5.1.2. Where it is not possible to avoid effects upon reptiles, it will be necessary to provide mitigation measures to avoid killing and, or injury of individual animals and avoid detrimental effects upon the local populations. The mitigation measures could comprise of:

- a translocation, which requires the trapping and translocation of reptiles to be affected by the Proposed Development to a prepared receptor habitat. This must be completed during the season that reptiles are active (March – September).
- habitat manipulation involving directional clearance of suitable habitat in a two-stage strim from 'inside' the footprint of works, to encourage reptiles to move towards areas of suitable habitat outside the Site boundary.
- an enhancement strategy, requiring the Proposed Development to include suitable reptile habitat within landscape plans.

Further recommendations will be made in the ecology strategy chapter of the Environmental Impact Assessment (EIA).

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6. CONCLUSIONS

6.1.1. WSP was commissioned by West Sussex County Council (WSCC) to undertake a reptile survey of the land associated with Phase 1 of the proposed realignment of the A29 at Eastergate, Westergate and Barnham. This is to inform an Environmental Statement to support a detailed planning application for the Proposed Development.

6.1.2. The survey was undertaken in accordance with good practice guidance. Low populations of common lizard and slow worm (peak adult count of one and two for each species respectively) was recorded within the Survey Area. The desk study returned records of grass snake within 150m of the Site, suggesting that a low population of grass snakes could also present.

6.1.3. Overall, based on the habitat characteristics, context and survey results, the Site is considered to be of value for reptiles at a Site level.

7. REFERENCES

PROJECT REFERENCES

- WSP (2018) A29 Realignment. Preliminary Ecological Appraisal.

TECHNICAL REFERENCES

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- HMSO (2006). Natural Environment and Rural Communities Act.

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8. FIGURES

Figure 1 - Site Location Plan

Figure 2 - Desk Study Records

Figure 3 - Reptile Survey Results

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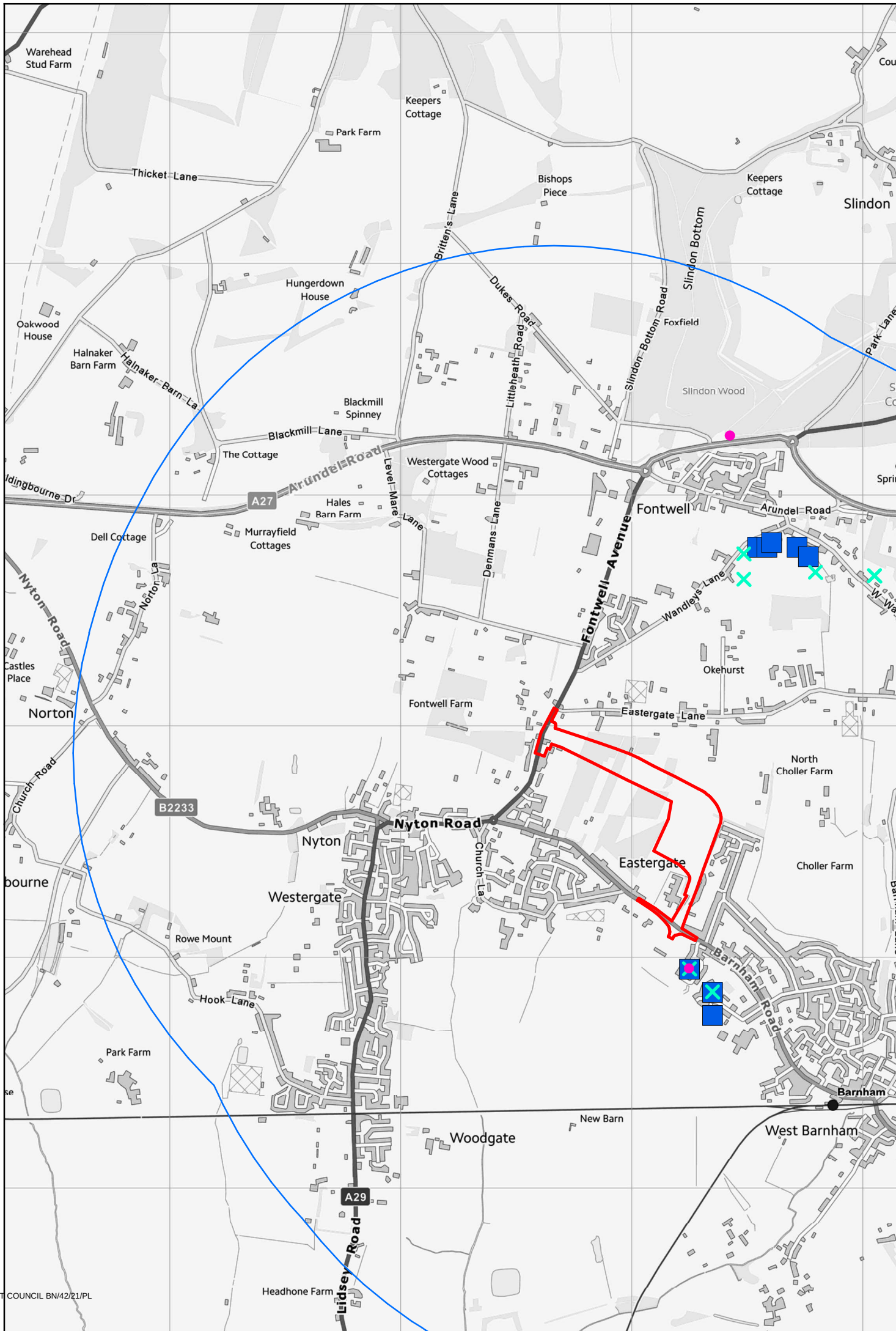

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Appendix A

WEATHER CONDITIONS

Table 2 - Weather Conditions during Survey

Survey Visit Number		1	2	3	4	5	6	7
Date		25/04/2019	23/05/2019	30/05/2019	04/06/2019	11/06/2019	24/06/2019	09/07/2019
Start	Time	08:30	12:00	07:30	09:00	09:30	08:00	09:15
	Air Temp. (°C) (shade)	11	16	14	14	13	18	17
	Cloud Cover (oktas)	8	3	4	8	4	2	7
	Wind Speed	4	2	2	3	3	2	2
Finish	Time	10:25	13:45	10:30	11:15	12:30	10:30	11:30
	Air Temp. (°C) (shade)	13	18	17	16	15	18	19
	Cloud Cover (oktas)	2	2	3	8	4	2	6
	Wind Speed	2	1	2	2	2	3	3
Description / Notes		Drizzle for part of the survey			Very light drizzle			

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