

The Lake Lothing (Lowestoft) Third Crossing Order 201[*]



Lake Lothing
**THIRD
CROSSING**

**Document 6.3: Environmental Statement
Volume 3 Appendices**

Appendix 11B

Bat Survey



Suffolk County Council

LAKE LOTHING THIRD CROSSING

Appendix 11B - Bat Survey Report





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WSP
Three White Rose Office Park
Millshaw Park Lane
Leeds
LS11 0DL
Phone: +44 113 395 6200
Fax: +44 113 395 6201
WSP.com



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Checked by	R. Bailey	R. Bailey	H. Roberts	H. Roberts
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CONTENTS

1	INTRODUCTION	1
1.1	INTRODUCTION	1
1.2	STUDY AREA	1
1.3	STUDY AIMS AND OBJECTIVES	1
2	METHODOLOGY	2
2.1	DESK STUDY	2
2.2	PRELIMINARY ASSESSMENT	2
2.3	DUSK EMERGENCE / DAWN RE-ENTRY SURVEYS	2
2.4	ACTIVITY SURVEYS	2
2.5	WINTER HIBERNATION SURVEY	2
2.6	DATA ANALYSIS	3
2.7	LIMITATIONS	3
3	RESULTS	4
3.1	DESK STUDY	4
3.2	PRELIMINARY ASSESSMENT	4
3.3	EMERGENCE SURVEYS	5
3.4	ACTIVITY SURVEYS	6
3.5	WINTER HIBERNATION SURVEY	6
4	DISCUSSION	7
4.1	BAT ROOSTING OPPORTUNITIES	7
4.2	BAT FORAGING AND WIDER CONTEXT	7
4.3	BAT HIBERNATION OPPORTUNITIES	7

TABLES

Table 1 - Assessment of sites with bat roost potential requiring further surveys	4
Table 2 - Dates and weather conditions for roost surveys	5
Table 3 - Dates and weather conditions for activity surveys	6

1 INTRODUCTION

1.1 INTRODUCTION

Suffolk County Council ("the Applicant") is applying for development consent for a third crossing over Lake Lothing ("the Scheme"). WSP (formerly Mouchel) was commissioned by Applicant to undertake surveys for bats at land within and adjacent to the Scheme.

An extended Phase 1 habitat survey was undertaken by Mouchel in October 2015 to inform the ecological appraisal within the outline business case submission for funding for the Lake Lothing Third Crossing. This survey identified buildings along and within proximity to the central crossing route option that were suitable to support roosting bats. It was subsequently recommended that further investigations should be undertaken to inform the Scheme design and assessment.

An update to this Phase 1 habitat survey was undertaken in October 2017 and established the baseline to be predominantly in line with the findings of the 2015 survey.

The aim of these surveys was to establish whether roosting bats were present within buildings adjacent to the Scheme and to determine levels of bat activity across the Scheme area. The surveys undertaken as part of this assessment is based on the findings of the October 2015 Phase 1 habitat survey and the recommendations from that report.

This report presents the results of the bat survey work undertaken in 2016 and 2017.

1.2 STUDY AREA

The Scheme runs from the Peto Way/Denmark Road roundabout at North Quay Retail Park, to the A12 Tom Crisp Way/B1531 Waveney Drive roundabout. The crossing of Lake Lothing is positioned between Denmark Way and Riverside Road. The Scheme incorporates the minor roads within the Riverside Road area. Two study areas were identified for bats, one for the desk study and one for the field surveys. The desk study area for bats extends up to 1km from the Scheme, whilst field surveys for bats focus on habitats within and immediately adjacent to the Scheme to allow sufficient information to identify whether there are significant effects upon bats.

1.3 STUDY AIMS AND OBJECTIVES

The aims of the survey work were to confirm whether bat roosts and foraging and commuting areas are present within or adjacent to the Scheme. To achieve this, the following tasks were undertaken:

- A review of bat records from within the study area received from relevant organisations;
- Field surveys investigating possible bat roosts and possible foraging and commuting features within the study area, and gathering data on the use of the study area by bats;
- Mapping and analysis of bat data, identification of bat species and number assemblages at specific locations and identification of commuting and foraging areas; and
- The results of these surveys will be used to inform an environmental impact assessment of the likely significant effects of the Scheme on bats and inform the requirement for any mitigation.

2 METHODOLOGY

2.1 DESK STUDY

The following sources were consulted for information on bats in the study area:

- Suffolk Biological Records Centre (SBRC) was consulted in 2015 and 2017 for records of protected species within the study area as part of the ecological assessment undertaken of potential alignment options; and
- The Multi-Agency Geographic Information for the Countryside (MAGIC) online resource was used to identify any records of granted European Protected Species (EPS) licences relating to bats within the study area.

2.2 PRELIMINARY ASSESSMENT

An assessment of the suitability of structures within the field survey study area (as defined in Paragraph 1.2 above) to support roosting bats was carried out in August 2016 so that suitable roosting features could be subject to further assessment at a later time. These features were assessed for their likelihood of supporting roosting bats (low, moderate and/or high) in accordance with the Bat Conservation Trust's Good Practice Guidelines¹. An assessment of suitable foraging and commuting features was also undertaken.

2.3 DUSK EMERGENCE / DAWN RE-ENTRY SURVEYS

Dusk emergence surveys were carried out by experienced bat surveyors between 30th August and 4th October 2016 whilst dawn re-entry surveys were undertaken between the 16th May and 19th September 2017. All surveys were undertaken following guidance set out in the BCT guidelines.

Depending on the likelihood of a structure to support roosting bats (low, moderate or high), each site was surveyed one, two or three times respectively, as recommended by the BCT guidelines. A plan of the buildings surveyed is provided in Figure 11.3 of the Environmental Statement. Dusk emergence surveys commenced 20 minutes before sunset and continued for up to two hours after sunset. Each surveyor was equipped with a Bat Box Duet detector with an MP3 recorder and made notes of the times of bat calls and any bat activity seen or heard. Anabat SD1 bat detectors were also used to record levels of bat activity around each location surveyed.

Dawn re-entry surveys were carried out in the same manner, commencing two hours before dawn and continuing until dawn.

2.4 ACTIVITY SURVEYS

Dusk activity surveys were undertaken on 15th and 19th September 2016 and 9th August and 18th September 2017. Surveys commenced at sunset and continued for approximately two hours with surveyors walking a predetermined route around the study area, stopping at regular listening points for a period of five minutes. A plan showing each transect route is provided in Figure 11.3 of the Environmental Statement i. Each surveyor was equipped with a heterodyne bat detector (Bat Box Duet) with an MP3 recorder and/or an Anabat recorder. Each surveyor noted the levels of bat activity, including times of calls and direction and type of passes.

2.5 WINTER HIBERNATION SURVEY

Two Song Meter SM4 recorders were deployed on the 18th of January 2017 within the vicinity of the building at the car garage on Denmark Road (grid reference: SE200458, Building B1 on Figure 11.3 of the Environmental Statement), which had been identified as suitable to support hibernating bats (see Table 1). One SM4 was attached to the eastern side of the building and the other was located approximately 20m from

¹ Collins, J. et al. (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). Bat Conservation Trust, London

the building at the southern boundary of the garage. The SD cards and batteries in both detectors were changed on the 2nd of February 2017 and the detector collected on the 10th of March 2017. The detectors were set to record from sunset until sunrise each night.

2.6 DATA ANALYSIS

Recorded data was analysed using Analook and/or BatSound as appropriate in order to obtain the following information:

- Species present (where identification possible);
- Activity levels and type of activity (commuting/foraging);
- Time of recorded activity; and
- Any bat calls recorded that were not identified on field notes.

2.7 LIMITATIONS

The BCT's good practice guidelines recommend that surveys using static bat detectors should be undertaken for a minimum of two weeks in each month from December to February. In this case, it was not possible to undertake surveys in December, however, continuous monitoring was undertaken from mid-January to early-March. The lack of survey data from December is not a significant constraint to the survey findings for the purposes of this study.

3 RESULTS

3.1 DESK STUDY

The data obtained from SBRC in 2015 did not identify any records of bats within the desk study area. The data included two records of bat roosts, brown long-eared bat *Plecotus auritus* and common pipistrelle *Pipistrellus pipistrellus*, both of which were located over 2.5km from the Scheme Order limits.

The desk study in 2017 identified 4 unidentified bat records within 2km of the Scheme Order limits.

There were no records of any previously granted EPS licences relating to bats within the study area.

3.2 PRELIMINARY ASSESSMENT

3.2.1. Roosts

Assessment of structures for their likelihood of supporting a bat roost was undertaken during August 2016.

Structures that might support a bat roost were considered in the context of their proximity to the Scheme to determine the need for and scope of further surveys. As stated in Paragraph 1.2, structures were identified based upon professional judgement as to whether the Scheme could impact significantly upon bats were they to be present.

Five sites were identified as requiring further surveys for bat roosts. The likelihood of each of these sites supporting roosting bats was assessed in accordance with the guidance and is summarised in Table 1 below.

Table 1 - Assessment of sites with bat roost potential requiring further surveys

Site Reference	Site Name	Description	Bat Roost Potential*
B1	David's Trade Car Garage, Denmark Road	Single storey brick built building with a concrete tiled, pitched roof. Multiple gaps/cracks in the brick work, large gaps between the top of the walls and the eaves, missing roof tiles. Poor state of repair.	High – multiple entry points, roof space enclosed within, building not in use. May also be suitable for hibernating bats.
B2	Rentokill, Waveney Drive	Two single storey brick built boiler house/substation type structures with flat roof and wooden barge boards.	Low – Possible gaps beneath the barge boards.
B3	Waveney District Council Registry Office, Canning Road	Two-storey office building with brick exterior, a tiled, hipped roof with concrete ridge tiles and hipped dormer sections on the northern and southern aspects. Well-fitting soffit boxes. Good state of repair.	Low – small gap beneath ridge tiles.
B4	Riverside Business Centre, Riverside Road	Large office building with a brick exterior and a complex tiled, hipped roof with several sections. Well-fitting soffit boxes. Solar panels on southern aspect of roof. Good state of repair.	Low – small gap between roof tiles.
B5	Residential House, 42 Waveney Drive	Two storey residential house with multiple pitched roof sections. Good state of repair.	Low – large parts of roof obscured from view. Features may be hidden.

*In accordance with BCT guidelines: High suitability = Structure with one or more potential roost sites suitable for use by large numbers of bats. Moderate suitability = Structure with one or more potential roost sites that could be used by bats but unlikely to support a roost of high conservation value. Low suitability = Structure with one or more potential roost sites that could be used by individual bats opportunistically.

3.2.2. Activity

An assessment of the likely value of the habitats within the study area for foraging and commuting bats was undertaken during August 2016. The habitats within the Scheme area are dominated by hardstanding and buildings which are of negligible value to foraging and commuting bats. Lake Lothing is of some value to foraging bats, however, given the lack of other suitable habitat within the area, this value is limited. In order to investigate bat activity across the area, activity surveys were undertaken.

3.3 EMERGENCY SURVEYS

The five sites identified as suitable to support roosting bats were scheduled to have one, two or three surveys depending on the likelihood of a bat roost being present. The dates and weather conditions during each of these surveys are shown in Table 2.

Table 2 - Dates and weather conditions for roost surveys

Site Reference	Site Name	Survey Records	Survey 1	Survey 2	Survey 3
B1	Car Garage, Denmark Road	Survey Type and Date	Dusk emergence, 08/09/16	Dusk emergence, 04/10/16	Dawn return, 07/09/17
		Weather Conditions	20°C, BF1, 60% CC, dry	17°C, BF3, 70% CC, dry	12°C, BF0, 90% CC, dry
B2	Rentokill, Waveney Drive	Survey Type and Date	Dawn re-entry, 16/05/17	N/A	N/A
		Weather Conditions	13°C, BF1, 50% CC, dry	N/A	N/A
B3	Waveney District Council Registry Office, Canning Road	Survey Type and Date	Dusk emergence, 30/08/16	N/A	N/A
		Weather Conditions	16°C, BF2, 5% CC, dry	N/A	N/A
B4	Riverside Business Centre, Riverside Road	Survey Type and Date	Dusk emergence, 12/09/16	N/A	N/A
		Weather Conditions	18°C, BF1-2, 50% CC, dry	N/A	N/A
B5	Residential House	Survey Type and Date	Dawn return, 19/09/17	N/A	N/A
		Weather Conditions	12°C, BF2, 100% CC, dry after heavy rain		

No bats were recorded emerging from any of the buildings surveyed.

At the Registry Office (B3) and Riverside Business Centre (B4), both of which are located on the southern side of Lake Lothing, bat activity recorded during the surveys was very low with only a single pipistrelle *Pipistrellus* sp. pass recorded during each survey.

At the car garage (B1), located on the northern side of the lake, low levels of *Myotis* sp. and common pipistrelle passes were recorded. In addition, periods of foraging activity by Nathusius' pipistrelle *Pipistrellus nathusii* were recorded along the southern edge of the garage compound.

At the residential house (B5), no bats were recorded by the surveyor on Waveney Drive. Four commuting passes by soprano pipistrelle *Pipistrellus pygmaeus* were recorded on Durban Road.

3.4 ACTIVITY SURVEYS

The dates and weather conditions during each of the activity surveys are shown in Table 3 and Figure 11.3 of the ES.

Table 3 - Dates and weather conditions for activity surveys

Site	Survey Type and Date	Weather Conditions
North Bank Transect	Dusk transect, 15/09/16	20°C, BF1, 30% CC, dry
South Bank Transect	Dusk transect, 19/09/16	17°C, BF2, 10% CC, dry
Railway Transect	Dusk transect, 09/08/17	Aborted due to heavy rain and hence rescheduled on 18/09/17
Railway Transect	Dusk transect, 18/09/17	14°C, BF3, 60% CC, dry at start, drizzle later.

Activity levels were low during both 2016 surveys, with activity limited to a small number of infrequent and faint commuting passes. A single *Myotis* sp. bat pass was recorded during the activity survey undertaken on the north side on the 15th of September 2016. A single common pipistrelle pass and two faint, unidentified bat passes were recorded during the activity survey undertaken on the south side on the 19th of September 2016.

During the second transect railway survey, a foraging noctule *Nyctalus noctula* was recorded on two occasions from the surveyor within the network rail land. A common pipistrelle was recorded by the automated detector, but was not observed by surveyors.

3.5 WINTER HIBERNATION SURVEY

No bat activity was recorded during the monitoring period between the 18th January and 10th March 2017.

4 DISCUSSION

4.1 BAT ROOSTING OPPORTUNITIES

No evidence of roosting bats was recorded at any of the buildings surveyed during the surveys undertaken during 2016 or 2017.

4.2 BAT FORAGING AND WIDER CONTEXT

Activity levels recorded during the emergence surveys and the walked transect surveys was generally low, typically with just individual bats recorded infrequently.

The highest level of activity was recorded along Durban Road in September 2017 with a number of soprano pipistrelle passes. The habitats provided by Durban Road are suitable for this species, however it is unlikely to be subject to disturbance by the Scheme due to the distance involved.

Surveys undertaken at B1, the car garage on the northern side of Lake Lothing recorded activity by Nathusius' pipistrelle. This species, although widespread, is rare within the UK. This species was not recorded on the 2017 surveys. It is considered that this species occasionally forages and commutes through the area associated with the railway line, but is unlikely to be roosting in the area of influence of the Scheme due to the lack of suitable habitat.

4.3 BAT HIBERNATION OPPORTUNITIES

No bat activity was recorded during the monitoring period and therefore it is unlikely that B1 is being used by hibernating bats.



Three White Rose Office Park
Millshaw Park Lane
Leeds
LS11 0DL

wsp.com