



Vattenfall Wind Power Ltd

Thanet Extension Offshore Wind Farm

Annex 5-9: Bat Survey Report

June, 2018, Revision A

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Vattenfall Wind Power Ltd

Thanet Extension Offshore Wind Farm

Annex 5-9: Bat Survey Report

June, 2018

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THANET EXTENSION OFFSHORE WIND FARM – ONSHORE GRID CONNECTION

Bat Survey Report
Prepared for: GoBe Consultants

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1.0 Introduction

1.1 Background

SLR Consulting was commissioned by GoBe Consultants (on behalf of Vattenfall Wind Power Ltd) 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 Drawings 1-3. 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 north, 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 (NR), managed by Kent Wildlife Trust.

1.3 Scope of Study

This report presents the findings of various surveys for bats.

The aims of the surveys 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 2017

The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations 2017) transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into

English law. The 2017 Habitats Regulations came into force on November 30th 2017 and consolidate and update the Conservation of Habitats and Species Regulations 2010. Under the Habitats Regulations it is 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). All UK bat species are listed under Schedule 2 of the Habitats Regulations 2017.

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 UK bat species are listed under Schedule 5 of the Act.

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.

Section 41 of the Act requires the publication of a list of habitats and species which are of principal importance for the purpose of conserving biodiversity. The Section 41 list is used to guide authorities in implementing their duty to have regard to the conservation of biodiversity. Bat species listed as Species of Principal Importance comprise:

- Barbastelle *Barbastella barbastellus*;
- Bechstein's bat *Myotis bechsteinii*;
- Noctule *Nyctalus noctula*;
- Soprano pipistrelle *Pipistrellus pygmaeus*;
- Brown long-eared bat *Plecotus auritus*;
- Lesser horseshoe bat *Rhinolophus hipposideros*; and
- Greater horseshoe bat *Rhinolophus ferrumequinum*.

2.0 Methodology

2.1 Survey Area

The survey area included all land within and immediately adjacent to the RLB under consideration at the time of survey, as shown in Drawings 1-3, excluding the former Richborough Power Station site to the west of the A256 (see Section 1.2).

2.2 Desk Study

Although a comprehensive desk study was beyond the scope of this report, 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 Wheeler¹ were reviewed for any historic records of bats.

2.3 Survey Methodology

2.3.1 Survey Aims

The main aims of the surveys were as follows:

- To assess the likely value of the habitats within the survey area for bats, in terms of roosting, foraging and commuting;
- To determine, as far as possible, whether bats were roosting within the survey area; and
- To identify, as far as possible, the bat species using the survey area and the levels of activity by each species, including any differences in the relative levels of activity across different parts of the survey area.

2.3.2 Habitat Assessment

The habitat within the survey area was assessed for its potential value for bats during an initial walkover, by a licensed bat worker, on 8th August 2017. This assessment considered the availability of connected habitats and the suitability of those habitats to provide foraging opportunities for bats. The potential value of the habitat within the survey area for bats was characterised in accordance with current Bat Conservation Trust (BCT) guidelines², as summarised below:

- Negligible: No habitat features likely to be used by commuting or foraging bats.
- Low: Habitat that could be used by small numbers of bats but is not well connected to the surrounding landscape, such as a gappy hedge, scrub patch or a lone tree.
- Moderate: Continuous habitat connected to the wider landscape, such as tree lines.
- High: Continuous, high quality habitat connected to the wider landscape. River valleys, streams, and broadleaved woodland would typically be classed as high potential.

¹ Amec Foster Wheeler Environment & Infrastructure UK Limited (October 2017) Thanet Extension Offshore Wind Farm; Annex 5.1: Extended Phase 1 Habitat Survey Report. Draft Report - CONFIDENTIAL

² Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1. Table 4.1 page 35.

The habitat potential is used to determine the frequency of bat activity surveys. For example, for habitats of moderate value current BCT guidelines recommend one transect survey per month between April and October, at least one of which should comprise a combined dusk and dawn survey within a 24 hour period; with static detector surveys at two locations per transect on five consecutive nights per month.

2.3.3 Preliminary Roost Assessment

Trees

A daytime visit was made on 8th August 2017 by a licensed bat worker to evaluate the potential for bats to roost in the trees and woodland within the survey area. Trees were inspected from ground level on all accessible aspects using high-powered binoculars and torches to identify features that may be used by bats for roosting, known as Potential Roost Features (PRFs), and to view inside cavities where possible.

The trees were initially assessed in groups, noting groups of trees with features that could be used by bats for roosting purposes. However, due to the number of trees, individual trees were not assessed at that stage (except where individual trees were clearly separated from other trees).

The roost potential of each tree or group of trees was assessed based on current BCT guidelines, as summarised below:

- Negligible: No habitat features likely to be used by roosting bats.
- Low: Trees of sufficient age to support PRFs but none seen or only very limited features.
- Moderate: Trees with one or more PRFs due to their size, shelter, protection, conditions or surrounding habitat but unlikely to support a roost of high conservation status.
- High: Trees with one or more PRFs which are obviously suitable for larger numbers of bats on a more regular basis due to their size, shelter, protection, conditions or surrounding habitat.

In addition, trees with roost potential were searched for evidence of bats (as far as possible from ground level). Evidence searched for included:

- Staining, beneath or around a hole/crack, caused by the natural oils in bat fur;
- Scratch marks around a hole/crack, caused by bat claws;
- Bat droppings beneath a hole/crack, or resting area;
- Bat droppings and/or insect remains beneath a feeding area;
- A characteristic odour of bats and/or droppings; and
- Dead bats - usually young from a nursery roost site.

Structures

Built structures within the RLB were considered for their potential to support bats, based on the criteria set out in current BCT guidelines, as summarised below:

- Negligible: No habitat features likely to be used by roosting bats.
- Low: Structures with one or more PRFs that could be used by individual bats opportunistically but which do not provide sufficient space, shelter, protection, conditions or surrounding habitat to be used by larger numbers of bats on a more regular basis.
- Moderate: Structures with one or more PRFs due to their size, shelter, protection, conditions or surrounding habitat but unlikely to support a roost of high conservation status.

- High: Structures with one or more PRFs which are obviously suitable for larger numbers of bats on a more regular basis due to their size, shelter, protection, conditions or surrounding habitat.

Only one building is present within the RLB, which was inspected from the ground for potential crevices; as the building is a ruin formed of external walls only there was no internal void to consider (see Appendix 01; Table A.2.1).

2.3.4 Potential Roost Feature (PRF) Inspection

Trees

Further information was provided by the client in September 2017, identifying areas within the RLB in which trees might be affected by the proposed development. Individual trees lying within those areas, which were identified during the preliminary roost assessment as lying with tree groups having potential to support roosting bats, were subject to a more detailed PRF inspection on 12th October 2017 by a licensed batworker qualified in tree climbing and aerial rescue. PRFs were accessed via a ladder and subject to further detailed examination for evidence of use by bats.

Detailed survey of PRFs involves a search for signs such as droppings, feeding remains, urine staining and scratch marks, as well as for bats themselves. All safely accessible PRFs were closely inspected using high powered torches (1M candle power), endoscope and binoculars as appropriate. Evidence of bat use and details of individual PRFs was recorded by the surveyors and used to refine the preliminary assessment of the likelihood that individual trees would be used by bats.

Buildings

Although lying outside the RLB, at the request of the client following reports of bat droppings previously found outside the building³, the Baypoint Sports Club clubhouse was inspected externally and internally by a licensed bat worker on 8th November 2017. The internal inspection included a full inspection of the internal loft space, to which access was good. Evidence of bats was searched for as described above for trees.

2.3.5 Potential Bat Roost Surveys

A tree line between Baypoint Sports Club and the British Car Auction (BCA) site to the south could not be accessed to undertake a thorough PRF assessment due to the presence of scrub on both sides of the tree line (see Drawing 3 for location). Nocturnal surveys were therefore undertaken on a precautionary basis in case PRFs were present. The surveys were undertaken in accordance with BCT guidelines for trees with moderate roost suitability, with one dusk survey undertaken in August and one dawn survey undertaken in September, more than two weeks later (see Table 2-1 for survey dates, times, etc).

Surveyors were positioned on either side to view both sides of the section of the tree line within the RLB. They then closely watched the trees from 15 minutes before dusk until at least 90 minutes afterward, or in the case of dawn surveys, from at least 90 minutes prior to sunrise until daylight. All bat activity was recorded using frequency division, zero crossing and/or heterodyne bat detector equipment, identifying bats to species where possible. In addition, recordings were made and the species confirmed through computer analysis (using AnaLookW software), as required.

The roost survey was supported with a static automated activity of the relevant tree line, as described in Section 2.3.6.

³ Amec Foster Wheeler Environment & Infrastructure UK Limited (October 2017) Thanet Extension Offshore Wind Farm; Annex 5.1: Extended Phase 1 Habitat Survey Report. Draft Report – CONFIDENTIAL. Table 4.11

2.3.6 Bat Activity Surveys

In accordance with current BCT guidelines, bat activity surveys included a combination of manual transect surveys and static detector surveys. Further details for each survey type are provided below.

Manual Transect Activity survey

A transect route was identified that covered all potentially valuable habitats for foraging and commuting bats within the survey area. Transect routes typically comprise routes of up to 5km in length. Whilst a single transect should therefore have provided sufficient coverage of the survey area, for logistical reasons (i.e. it was not possible to walk between Stonelees NR and Baypoint Sports Club) two shorter transects were used. Transect 1 (T1) covered Pegwell Bay CP and Stonelees NR and was approximately 1.9km in length. Transect 2 (T2) covered the grounds of Baypoint Sports Club and was approximately 800m in length. The habitats within the BCA site and Richborough Port area, in the south of the survey area, are dominated by hardstanding and were considered to be largely unsuitable for foraging and commuting bats. These areas were therefore not included in the transect survey. Transect routes are shown in Drawings 1 and 2 respectively.

As both transects were relatively short, this enabled two laps of each transect route to be undertaken within the relevant time periods, effectively providing double the level of coverage on each survey visit.

Stopping points were incorporated into the routes, where the surveyors would wait for five minutes in order to maximise opportunities to detect bat activity. T1 included seven stopping points and T2 eight. Due to the greater distance of T1, walking speed between the stopping points needed to be slightly faster than for T2. The order in which the stopping points were visited was varied on each occasion in order to capture a better overall picture of the most profitable areas for foraging activity, and to increase the probability of observing any emergence from roosts, or any swarming or commuting behaviour prior to roost re-entry. As many of the stopping points as possible were re-visited on the second lap of the transect route, but it was not always possible to stop at every point twice in order to complete a second lap in time.

Two surveyors undertook each manual transect activity survey, sharing a heterodyne detector to listen out for bat calls and an Anabat Express bat detector to record the calls.

Transect surveys commenced at or just before dusk and continued for two hours in suitable weather conditions, in accordance with current BCT guidelines. Dawn surveys commenced two hours before sunrise and finished at sunrise. The surveys were undertaken between August and October (see Table 2-1 for dates, times, etc). Three surveys were undertaken for T1 Pegwell Bay CP and Stonelees NR., of which two comprised combined dusk and dawn surveys within a 24 hour period, with one separate dusk survey. T2 Baypoint Sports Club surveys comprised three surveys, with a combined dusk and dawn survey in September; a separate dusk survey in September (undertaken more than two weeks after the first survey); and a dusk survey in October. The lack of an August survey was because nocturnal access was not available to Baypoint Sports Club until early September.

Automated Static Activity Survey

Between two and four Anabat Express bat detectors were installed in suitable habitats around the survey area on a number of separate occasions between August and October 2017. The Anabats were left in situ for at least five nights on each survey occasion in order to identify bat activity throughout the night at each location.

In total recording was carried out over 85 detector/nights⁴ during the period, although equipment failures (see Section 2.7) meant that data were only obtained for 75 detector/nights.

⁴ One detector/night = one detector recording for one night. So, for example, two detectors recording for five nights = ten detector/nights.

The locations of the static surveys were identified to complement the manual transect activity surveys. These comprised:

- BD1a and b to the north of Pegwell Bay CP. The position of BD1b, located within a small area of scrub, was only used for the first automated survey. BD1a was used subsequently as it was considered less likely that the detector would be stolen from this position. BD1a was next to an apple tree within grassland, adjacent to a tree line.
- BD2 was located next to a partially fallen tree at the edge of a small copse, adjacent to the cycle path.
- BD3 lay along the track that passes between Stonelees Nature Reserve and Bay Point Sports Centre.
- BD4 was situated mid-way along the tree line along the northern boundary of the Baypoint sports field, adjacent to Stonelees Nature Reserve.
- BD5 was midway along the eastern tree line around the boundary of the Baypoint sports field.
- BD6 comprised the treeline between the Baypoint Sports Club and BCA sites. Survey was undertaken here on one occasion only to complement the roost surveys of the tree line (see Section 2.3.4).

The locations of these points are illustrated in Drawings 1 and 2 and survey dates are provided in Table 2-2.

2.4 Data Analysis

This report refers to ‘registrations’ or ‘bat passes’. These are a single sound file captured by an automated detector, and do not necessarily relate to the numbers of bats that may be present. A large number of registrations can equally result from one bat passing a detector many times/feeding overhead, or many bats passing.

Recorded data were analysed using Analook software (Titley Electronics) by experienced personnel from SLR using Russ (2012)⁵ to assign species where possible and in accordance with the following:

- Due to the difficulties of separating *Myotis* species from sonograms alone, *Myotis* calls have not been identified beyond genus level.
- For the purpose of differentiating common (*Pipistrelleus pipistrellus*) and soprano pipistrelle bat, calls with a peak frequency between 42 kHz and 50 kHz have been classified as common pipistrelle. 51 kHz and above as soprano pipistrelle. Calls at 41 kHz or less are considered to be Nathusius’ pipistrelle (*Pipistrellus nathusii*). Some pipistrelle registrations may however remain ambiguous; such registrations were assigned to “pipistrelle species”.
- *Nyctalus* and *Eptesicus* calls can easily be misclassified; particularly those of Leisler’s bat (*Nyctalus leisleri*) and serotine (*Eptesicus serotinus*). Due to the similarity of the calls it is not always possible to accurately differentiate between the three species and in such cases they have been labelled as “big bat” in the Anabat analysis.

All calls which were ambiguous or potentially relating to rare species were subject to a double check by a second experienced bat worker from SLR.

2.5 Survey Dates, Times and Weather Conditions

Bat activity is influenced by seasonality, sunset and sunrise times, and weather conditions. Current BCT guidelines recommend surveys should be undertaken in conditions close to optimal, which includes: sunset

⁵ Russ, J. (2012): British Bat Calls: A guide to species identification, Pelagic Publishing, ISBN 978-1907807251

temperature above 10°C and no rain or strong wind, as emergence/ re-entry and foraging activity patterns may be affected. The survey dates and weather conditions are detailed in Table 2-1.

Table 2-1: Survey Dates, Times and Weather Conditions

Survey	Sunset / Sunrise Time	Survey Date	Survey times		Temp. (°C)	Wind	Cloud (in eighths)
T1 Pegwell Bay transect	Dusk – 20:01	22/08/17	Start Time	19:48	22	8 mph	6/8
			End Time	22:06	21	8 mph	6/8
T1 Pegwell Bay transect	Dawn – 05:50	23/08/17	Start Time	03:50	19	9 mph	1/8
			End Time	05:54	22	9 mph	1/8
T1 Pegwell Bay transect	Dusk – 19:29	05/09/17	Start Time	19:39	18	12mph S	7/8
			End Time	21:31	17	9mph SW	6/8
T1 Pegwell Bay transect	Dawn – 06:15	06/09/17	Start Time	04:18	13	12mph W	0
			End Time	06:20	12	11mph WSW	0
T2 Baypoint transect	Dusk – 19:29	06/09/17	Start Time	19:29	16	6mph WNW	7/8
			End Time	21:28	14	6mph WNW	5/8
T2 Baypoint transect	Dawn – 06:20	07/09/17	Start Time	04:18	12	7mph WSW	8/8
			End Time	06:22	11	7mph WSW	8/8
T2 Baypoint transect	Dusk – 18:44	26/09/17	Start Time	18:13	16	5mph ENE	1/8
			End Time	20:53	14	4mph ENE	0/8
T1 Pegwell transect	Dusk – 18:07	12/10/17	Start Time	18:00	16	13mph SW	2/8
			End Time	20:14	13	13mph SW	1/8
T2 Baypoint Transect	Dusk- 18:07	12/10/17	Start Time	18:00	16	13mph SW	2/8
			End Time	20:14	13	13mph SW	1/8
Tree line roost survey	Dusk – 19:43	31/08/17	Start Time	19:28	14	5mph W	6/8
			End Time	21:06	12	7mph W	6/8
Tree line roost survey	Dawn – 06:55	27/09/17	Start Time	04:48	13	5mph E	1/8
			End Time	06:55	10	5mph E	1/8

The survey dates for the automated static activity surveys are detailed in Table 2-2 below.

Table 2-2: Automated Static Activity Survey Dates

Bat Detector	First survey	Second survey	Third survey	Fourth survey
BD1a / BD1b	31/08/17 – 04/09/17	19/09/2017 – 23/09/2017	12/10/2017 – 16/10/2017	26/10/2017 – 30/10/2017
BD2	Anabat failure	19/09/2017 – 23/09/2017	12/10/2017 – 16/10/2017	26/10/2017 – 30/10/2017
BD3	31/08/17 – 04/09/17	26/09/17 – 30/09/2017	12/10/2017 – 16/10/2017	Anabat failure
BD4	No access	19/09/2017 – 23/09/2017	12/10/2017 – 16/10/2017	N/A
BD5	No access	19/09/2017 – 23/09/2017	N/A	26/10/2017 – 30/10/2017
BD6	N/A	26/09/17 – 30/09/2017	N/A	N/A

2.6 Survey Personnel

All the ecologists involved in the survey work are experienced in undertaking bat surveys. The automated static and manual transect activity surveys were led by Natasha Nixon, a Senior Ecologist with SLR with approximately ten years' experience and a full Member of Chartered Institute of Ecology and Environmental Management (MCIEEM) and a Chartered Environmentalist (CEnv). Natasha was assisted by a number of Graduate or Assistant Ecologists, all with some previous experience of bat survey work.

The preliminary tree assessments, potential roost feature surveys and tree roost surveys were led by Eleanor Davies. Eleanor is a Senior Field Ecologist with SLR with over 7 years bat survey experience (NE Class Licence reference 2015-15798-CLS-CLS) and a full member of CIEEM. David Harwood BSc(Hons) GradCIEEM undertook the data analysis for the activity and roost surveys. David has been working for SLR Consulting for over 3 years, during which time has collected and analysed large volumes of bat data from a wide range of sites, captured using a variety of detectors. A sample of the analysed bat calls was verified by Dale Broadbent BSc (Hons) MCIEEM. Dale holds a Natural England class two survey licence for bats (2015-12071-CLS-CLS), is accredited to use Natural England's Low Impact Class licence (RC017) and has over nine years' experience as an ecological consultant.

2.7 Survey Limitations

2.7.1 Desk Study

The desk study was limited to a review of relevant data included in the Phase 1 Report and may therefore not be comprehensive.

2.7.2 Habitat Assessment

The assessment was undertaken during an optimal time of year during good weather conditions, therefore no constraints are considered pertinent to the assessment.

2.7.3 Preliminary Roost Assessment / Potential Roost Feature (PRF) Inspection

Trees

The initial assessments were undertaken during the summer, when foliage was present on trees. This has the potential to hide or obscure features that may be present. However, where foliage inhibited the initial assessment, nocturnal roost surveys were undertaken to compensate for this. Therefore the time of year is not considered to be a constraint in this regard.

Trees which could potentially be affected by the proposed development were only identified in September 2017 and were therefore not subject to detailed PRF inspections until October. Detailed inspections were able to be undertaken for most of these trees, although a small number of trees (Location 10, Drawing 3) were too rotten to be accessed by ladder and detailed inspection was therefore not possible. A precautionary approach was therefore adopted for these trees and they were assessed as having moderate potential. Under current BCT guidelines trees identified to have moderate or greater roost potential should be subject to nocturnal surveys during the period May to September (with at least one survey carried out prior to the end of August). Due to the time of year, it was not possible to undertake nocturnal roost surveys of these trees within the prescribed time period. In such cases, recommendations have been made for further survey work, which may be required if the relevant trees would be affected by the proposed development.

Buildings

The building assessments were undertaken during favourable weather conditions and access was good. No constraints were relevant to these surveys.

2.7.4 Roost surveys

The dusk and dawn surveys were undertaken during the active period for bats, within favourable weather conditions, and with a surveyor on either side of the tree line. Whilst both surveys were undertaken towards the end of the season the timings of the surveys were in line with current BCT guidelines. One surveyor on each side was considered sufficient as any bat activity could be seen and/ or heard along the length of the section within the survey area. Therefore no significant constraints are considered pertinent to these surveys.

2.7.5 Manual Transect Activity Surveys

Due to the timing of the commission the manual transect activity surveys were undertaken at the latter end of the active season (August / September to October) and therefore the months of April to July were not surveyed. To compensate for the late start, each transect was subject to additional survey effort, with two laps of each transect carried out on each survey visit, effectively providing twice the prescribed level of survey effort.

An August transect survey could not be undertaken at Baypoint Sports Club as nocturnal access to that part of the survey area was not granted until early September. The planned August survey in this area was therefore undertaken in early September. The resulting delay was therefore limited to a few days and is not considered to have significantly affected the validity of the survey results. This survey was also completed more than two weeks prior to the planned September survey at Baypoint Sports Club, which ensured that the range of survey dates was evenly spread.

Throughout the survey period, construction works were in progress for a different scheme (the Nemo Link) along the length of the cycle track in Pegwell Bay CP, Stonelees NR and Baypoint Sports Club. However, during the dates on which surveys were carried out works were only undertaken during the daytime, and therefore there were no effects from noise, vibrations or lighting during the surveys. However, it is acknowledged that the habitat conditions during the survey period may have been less favourable than would otherwise have been the case, as the extent of grassland habitats would have been reduced.

The construction works also meant that different footpaths leading from the main cycle path through Pegwell Bay CP were open and closed during the survey programme. Depending on which of the footpaths were open, the route could be walked more quickly and more of the stopping points could be re-visited on the second lap.

During use, the fields and grounds at Baypoints Sports Centre were subject to high levels of illumination, particularly in the vicinity of the two all-weather pitches. The illumination was turned off when the pitches were not in use, but the level of illumination was extremely intrusive in the localised area. As this would have been consistent with the regular baseline conditions, this is not considered to have affected the validity of the surveys.

Whilst effort was made to compensate for the absence of survey data during the early and mid-season periods, i.e. by additional survey effort during the survey period, it is acknowledged that the lack of survey data for earlier in the season is a potential constraint to any subsequent assessment. Whether this constraint is significant will depend on the extent of potential impacts resulting from the final project design.

2.7.6 Automated Static Activity Surveys

Current BCT guidelines require two positions per transect to be surveyed for at least five nights per month, throughout the bat active season (April to October) for sites with moderate habitat suitability (as here). To compensate for the fact that surveys commenced relatively late in the year, attempts were made to survey at least four positions each month, which represents double the level of survey effort prescribed by the guidelines (assuming that the two transects surveyed are effectively treated as a single transect – see Section 2.3.5).

On two occasions, the bat detectors did not correctly record sound samples due to unknown malfunctions. However, overall 75 nights of data were collected over the survey period which is considered sufficient to provide a good picture of the bat species and level of activity in the survey area during the period surveyed.

As for the transect surveys, although effort was made to compensate for the absence of survey during the early and mid-season periods, i.e. by use of additional static detectors, it is acknowledged that the lack of survey data for earlier in the season is a potential constraint to any subsequent assessment. Whether this constraint is significant will depend on the extent of potential impacts resulting from the final project design.

3.0 Results

3.1 Desk study

A search of data using online sources⁶ identified several records of bats within a 5km radius, including common and soprano pipistrelle, serotine, noctule, Daubenton's *Myotis daubentonii*, Natterer's *Myotis nattereri*, and brown long eared bats.

The desk study undertaken by Amec Foster Wheeler in March 2017 identified records from Kent and Medway Biological Records Centre of bats recorded within 5km between 2008 and 2016. The records comprised common, soprano, and Nathusius' pipistrelles *Pipistrellus nathusii*; noctule; whiskered *Myotis mystacinus*, Brandt's *Myotis brandti* and Daubenton's; brown long eared; and a horseshoe bat species. None of the bat records quoted by Amec Foster Wheeler were located within the RLB.

3.2 Habitat assessment

The habitats within the RLB include extensive areas of grassland, hedgerows, dense scrub patches, tree lines and wooded areas that have some connectivity to other habitats within the wider landscape, including salt marsh and the River Stour to the east; and, beyond the A256 to the west, grassland, tree and arable habitats within the golf courses and farmland. Therefore, overall, the habitat was considered to be of moderate potential for use by bats for commuting and foraging, based on the criteria described in Section 2.3.1.

3.3 Preliminary Roost Assessment / Potential Roost Feature (PRF) Inspection

3.3.1 Trees

A number of individual trees or groups of trees within or adjacent to the RLB were considered to have low or moderate potential to support roosting bats following the preliminary roost assessment and more detailed PRF inspections. The locations of these trees or groups of trees are shown in Drawing 3. Further details regarding individual trees are provided in Appendix 01 (Table A1.1).

Trees with low or moderate bat roost potential which are located within the areas that might be affected by the proposed development comprise the following:

- Tree 8 – white poplar *Populus alba* with low roost potential.
- Tree 10 – various Lombardy poplars *Populus nigra Italica*. Those trees which could be checked had low roost potential but some more rotten trees were not safe to check and as a precaution have therefore been graded as having moderate roost potential.
- Tree 11 – row of trees, mostly sycamore *Acer pseudoplatanus*, with low roost potential.

None of the trees subject to detailed inspection (as listed above) had evidence of bat use or were assessed to have high potential for bats. However, some of the trees could not be fully investigated by ladder because the tree was rotten and could not safely support a ladder. Further survey of these trees would be required to confirm presence/ likely absence of roosting bats, if the relevant trees cannot be avoided by the proposed development (see Section 4).

⁶ NBN Gateway. Available from: <https://nbn.org.uk/national-biodiversity-network/archive-information/nbn-gateway/>. Accessed 1st December 2017.

3.3.2 Buildings

One structure within the RLB, a ruin situated next to the Richborough Port site, was assessed for bat roost potential (refer to Appendix 01 Table A2.1) but was considered to have negligible potential.

The Baypoint Sports Club Clubhouse was considered to be of low potential overall, with no signs of bats recorded during the survey in November 2017. No features were found around the exterior that were of moderate or high quality, or that appeared to provide internal access, and the tiled and pitched roof on the rear of the building was only considered to have potential to provide external opportunities for transient roosts. The internal loft space was considered to have potential to be used by bats as access was available to the outside, but no evidence of presence or activity was found during a thorough search. Further details are provided in Appendix 01 (Tables A2.1 and A2.2).

3.4 Roost Surveys

The roost surveys undertaken covered the tree line between the Baypoint Sports Club site and the BCA site (see Drawing 3).

Plate 1: Tree Line between Baypoint Sports Club and BCA Site



Although bat activity was recorded, no bats were seen emerging from or returning to the tree line during either survey. The level of activity overall was also low, with only one or two bats seen at a time. A complementary automated static activity survey was also undertaken at the tree line to provide data on the species and indicative levels of activity overnight. As well as the common and soprano pipistrelle observed and registered during the roost surveys, the automated survey also included relatively small numbers of registrations of *Myotis* species, Nathusius' pipistrelle and noctule. A summary of both the dusk and dawn survey and static detector survey findings is provided in Table 3-1 (refer to Appendix 01; Table A.3.1 and Table A.3.2 for detailed survey results).

Table 3-1 Summary of Results of Tree Roost Surveys

Date	Survey	Bat species identified
31/08/17	Dusk roost emergence	Common pipistrelle (constant foraging activity) Soprano pipistrelle (constant foraging activity) Big bat species (1 pass)
27/09/17	Dawn roost emergence	Common pipistrelle (5 passes) Soprano pipistrelle (7 passes)
27/09/17 - 01/10/17	Static automated survey	Pipistrelle species (average of 7.6 passes per night) Soprano pipistrelle (average of 128.8 passes per night) Common pipistrelle (average of 147 passes per night) Nathusius' pipistrelle (average of 2 passes per night) Noctule (average of 9 passes per night) Big bat species (average of 0.2 passes per night) <i>Myotis</i> species (average of 1.8 passes per night)

The level of activity recorded during the automated static survey was variable over the five night period of survey, for example noctule was only heard on one of the five nights and common and soprano pipistrelle activity was much higher on the last two nights than on the first three. However, such variation typically reflects weather conditions and availability of resources (i.e. prey items) which the bats would have encountered close to their roost sites, or whilst commuting, as well as the prey available in the vicinity of the tree line surveyed.

Over the period of the static automated survey, the times of the first registrations of bats after dusk were investigated (see Appendix 01, Table A3.2) to identify whether these indicated the presence of a roost nearby. The only species recorded within one hour of dusk were common and soprano pipistrelles, the earliest records of which were 21 and 13 minutes after dusk, respectively. Common pipistrelle is an early emerging species² and the timing of the records is therefore not necessarily indicative of a roost nearby. However, soprano pipistrelles were frequently recorded soon after dusk, which indicates the use of a roost or roosts used by the soprano pipistrelle bats in relatively close proximity to the tree line during that survey period.

During other survey visits to the site later in the year (once leaf fall had occurred), it was easier to see through the scrub to the tree line through the centre. At that point it was ascertained that the trees were too immature to support features that would be of sufficient quality to provide roosting opportunities for bats (see Appendix 01 Table A.1.1).

Based on the above it is concluded that no bat roosts are present within the tree line, although the tree line is used by foraging / commuting bats of a range of species. The static detector data also indicate the presence of a soprano pipistrelle roost in relatively close proximity to the tree line.

3.5 Manual Activity Transect Surveys

Manual activity surveys were undertaken between August and October 2017. The results of the surveys are detailed Appendix 01 (Table A.4.1), and a summary of the results is provided in Table 3-2.

Observed bat activity was greatest in Stonelees NR and along the tree line that borders the playing field within Baypoint Sports Club to the north and east; between Stops E and F (for T1) and F and G (T2) respectively.

3.5.1 Pipistrelle Species

The transect surveys recorded low levels of pipistrelle activity during each of the surveys, with localised areas used more frequently for foraging activity. Whilst two pipistrelle bats were seen concurrently on a few occasions, most of the observations concerned single bats commuting between areas.

3.5.2 Big Bats

Noctule were rarely recorded during the transect surveys, with registrations on 6th and 26th September at Baypoint Sports Club more than an hour after dusk. No other big bat species were registered during the manual transect surveys.

3.5.3 Myotis species

Myotis species were registered at Baypoint Sports Club during the late September dusk survey only, with just a few passes registered almost an hour after dusk. As an early emerging species, it is possible that the individual/s would have travelled from further afield or may have a roost site close by but foraged prior to passing by.

Table 3-2: Summary of Bats Observed and Activity Recorded during Manual Transect Surveys

Survey Description and Dates	Species recorded and Total Passes Registered / Observed	
	T1 Pegwell Bay CP and Stonelees NR	T2 Baypoint Sports Club
August dusk transect (22/08/17)	Common pipistrelle (5 passes) Soprano pipistrelle (3 passes)	No access
August dawn transect (23/08/17)	Common pipistrelle (1 pass) Soprano pipistrelle (3 passes)	No access
Early September dusk and dawn transects (05/09/17 – 06/09/17)	<i>Dusk:</i> Common pipistrelle (1 pass) Pipistrelle species (2 passes) <i>Dawn:</i> Pipistrelle species (foraging and 4 further passes). Soprano pipistrelle (13 passes recorded)	N/A
Early September dusk and dawn transects (06/09/17 – 07/09/17)	N/A	<i>Dusk:</i> Common pipistrelle (26 passes) Soprano pipistrelle (2 passes)

Survey Description and Dates	Species recorded and Total Passes Registered / Observed	
		Noctule (2 passes) <i>Dawn:</i> Soprano pipistrelle foraging activity (8 passes registered)
Late September dusk survey (26/09/17)	N/A	Common pipistrelle (37 passes) Soprano pipistrelle (8 passes) Nathusius' pipistrelle (1 pass) Noctule (3 passes) <i>Myotis</i> species (3 passes)
October dusk survey (12/10/17)	Pipistrelle species (16 passes)	Common pipistrelle (8 passes) Soprano pipistrelle (10 passes)

3.6 Automated Static Activity Surveys

A summary of the bat species identified and number of passes recorded at each static recording location during each survey period is shown in Table 3-3. Refer to Appendix 01 (Table A.5.1) for more detailed information on the level of bat activity recorded per survey.

Table 3-3: Summary of Bat Activity per Location

	BD1	BD2	BD3	BD4	BD5
First survey					
Pipistrelle sp.	1	Anabat logged on first night only – no calls recorded.	314	No access	No access
Soprano pipistrelle	6		844		
Common pipistrelle	5		338		
Nathusius' pipistrelle	1		3		
Leisler's	1		1		
Noctule	0		239		
Serotine	2		7		
Big bat species	0		80		
<i>Myotis</i> species	2		5		
Second survey					
Pipistrelle sp.	0	1	29	81	3

Soprano pipistrelle	2	296	15	655	737
Common pipistrelle	6	272	9	562	1,578
Nathusius' pipistrelle	3	23	23	18	12
Leisler's	1	2	0	1	0
Noctule	5	5	27	10	52
Serotine	0	3	1	1	0
Big bat species	0	7	1	1	5
<i>Myotis</i> species	0	3	0	11	12
Third survey					
Pipistrelle sp.	0	1	153	68	N/A
Soprano pipistrelle	0	15	659	61	N/A
Common pipistrelle	0	11	351	110	N/A
Nathusius' pipistrelle	0	9	145	10	N/A
Leisler's	0	9	7	0	N/A
Noctule	0	1	29	11	N/A
Big bat species	0	0	26	0	N/A
<i>Myotis</i> species	0	48	162	27	N/A
Fourth survey					
Pipistrelle sp.	0	0	Anabat malfunctioned	N/A	3
Soprano pipistrelle	3	0		N/A	18
Common pipistrelle	5	1		N/A	9
Nathusius' pipistrelle	5	2		N/A	4
Leisler's	4	0		N/A	0
Big bat species	0	4		N/A	0
<i>Myotis</i> species	0	0		N/A	0

To correct for differences in the number of nights on which recording took place at each recording location, the average number of bat passes per night has been calculated and is presented in Table 3-4. The bat passes per night figure was derived by taking the total number of bat passes by each species at each location and dividing these figures by the total number of nights over which recording took place at that location.

Table 3-4: Average Number of Bat Passes per Night, by Species, at each Static Bat Detector Survey Point

	BD1	BD2	BD3	BD4	BD5
Pipistrelle sp.	0.05	0.13	33.07	14.9	0.6
Soprano pipistrelle	0.55	20.73	101.2	71.6	75.5
Common pipistrelle	0.8	18.93	46.53	67.2	158.7
Nathusius' pipistrelle	0.45	2.27	11.4	2.8	1.6
Leisler's	0.3	0.73	0.53	0.1	0
Noctule	0.25	0.4	19.67	2.1	5.2
Serotine	0.1	0.2	0.53	0.1	0
Big bat species	0	0.73	7.13	0.1	0.5
<i>Myotis</i> species	0.1	3.4	11.13	3.8	1.2

The automated static surveys at locations BD1 – BD5 recorded a total of at least seven species (*Myotis* bats were not identified to species level). Of these, common and soprano pipistrelle were by far the most commonly-recorded species with each species recording over 100 bat passes per night at one recording location (BD5 and BD3 respectively) and relatively high levels of activity were also recorded at other locations. Other species were recorded much less frequently. 11.4 Nathusius' pipistrelle passes per night, 19.67 noctule passes per night and 11.13 *Myotis* passes per night were recorded at location BD3 but activity levels for species other than common and soprano pipistrelle were relatively low (<10 bat passes per night) at all other locations. Serotine and Leisler's bat were only recorded in very low numbers (less than one bat pass per night at any location).

Caution should be applied when directly comparing levels of bat activity between recording locations owing to differences in the dates of recording at some locations, which could have affected the results (e.g. due to differences in weather conditions between recording periods). However, the data strongly indicate that the highest levels of bat activity occurred at locations BD3, BD4 and BD5. These locations are all associated with the woodland edge and tree line along the northern and eastern edges of the Baypoint Sports Club site. Activity levels at locations BD1 and BD2, in more open habitats within Pegwell Bay Country Park, were generally much lower. In addition to the automated static surveys summarised in Tables 3-3 and 3-4, an automated static survey was undertaken at the tree line between Baypoint Sports Club and BCA (refer to Section 3.4 / Table 3-1 above). This survey recorded a broadly similar species assemblage to those undertaken at BD1 – BD5, with common and soprano pipistrelles again by far the most frequently recorded species (147 and 128.8 passes per night respectively). As for locations BD1 – BD5 all other species were recorded relatively infrequently (i.e. <10 passes per night). Serotine and Leisler's bats were not recorded at the tree line.

4.0 Summary and Conclusions

4.1 Surveys Undertaken

A range of bat surveys were undertaken between August and October 2017. These included preliminary assessments of bat roost potential and the potential value of habitats for foraging / commuting bats; detailed inspections of trees which could potentially be affected by the proposed development; nocturnal roost surveys of a line of trees for which detailed inspections were not possible; manual transect activity surveys and static detector activity surveys.

Due to the timing of the commission surveys were only undertaken at the latter end of the active season (August to October) and the months of April to July were not able to be surveyed. Whilst effort was made to compensate for the absence of survey data during the early and mid-season periods, i.e. by additional transect survey and static recording effort during the survey period, it is acknowledged that the lack of bat activity data for earlier in the season is a potential constraint to any subsequent assessment. Whether this constraint is significant will depend on the extent of potential impacts resulting from the final project design.

4.2 Bat Species Recorded

The bat species assemblage recorded within the RLB comprised at least seven species (it is not always possible to identify *Myotis* bats to species level from sonograms alone and therefore identification of *Myotis* bats to species level was not attempted, meaning more than one *Myotis* species may have been present). The seven species (or species groups) identified were:

- Common pipistrelle;
- Soprano pipistrelle;
- Nathusius' pipistrelle;
- Noctule;
- Leisler's;
- Serotine; and
- *Myotis* species.

Of these species common and soprano pipistrelles are the two commonest bat species in the UK and despite recent declines remain relatively common and widespread. Nathusius' pipistrelle records are relatively sparse, although numbers have increased in recent years, possibly due to increasing awareness of them but possibly also due to range expansion from the continent. Noctule remains relatively widespread, despite having declined. Leisler's is rarer, although relatively widespread. Serotine is one of the less common species in the UK, being restricted to the south of England. It has also declined in recent years⁷.

Although all UK bat species are legally protected, none of the species recorded are listed on Annex 2 of the Habitats Directive (species requiring the designation of SACs). Although widely occurring and relatively common, noctule, soprano and common pipistrelles are Kent Biodiversity Action Plan (BAP) priority species. All bat species in Kent are in long term decline, and even the commoner species are considered to be vulnerable

⁷ Bat Conservation Trust. 2017. UK Bats Factsheets. Available online http://www.bats.org.uk/pages/uk_bats.html [accessed 19th December 2017]

to future population loss⁸. Soprano pipistrelle and noctule are also included on the list of species of principal importance for the purpose of conserving biodiversity under Section 41 of the NERC Act 2006 as a result of recent population declines.

4.3 Bat Roosts

No roost sites were observed during the tree and building inspections or during the nocturnal roost surveys and no activity indicative of roosts was identified during the manual transect surveys.

A small number of trees which could potentially be affected by the proposed development were too rotten to be inspected in detail using ladders and were not able to be accessed until after the end of the season for nocturnal roost surveys (Location 10, Drawing 3). A precautionary approach to these trees has therefore been taken and they have been identified as having moderate potential to support roosting bats. If these trees will be affected by the proposed development further surveys are therefore recommended. In accordance with current BCT guidelines such trees should be subject to two nocturnal surveys between May and September (at least one of which must take place before the end of August).

A small number of trees which could potentially be affected by the proposed development were identified as having low potential to support bat roosts (Locations 8, 10 and 11, Drawing 3). In accordance with current BCT guidelines no further surveys are required for these trees, although appropriate precautions should be undertaken during felling.

4.4 Bat Activity Surveys

At least five species (common, soprano and Nathusius' pipistrelles, noctule and *Myotis* species) were recorded during manual transect surveys. Two further species, Leisler's and serotine, were recorded during the static detector surveys. An overview of the records obtained for each species during the manual transect and static detector activity surveys, is provided below:

- Common pipistrelle. The species was most frequently recorded along the northern edge of the tree line at Baypoint Sports Club (e.g. Location BD5 where an average of 158.7 bat passes per night was recorded during the sampling period). Foraging activity was observed along this tree line and the adjacent tree line where BD4 was situated, through to the crossing point into Stonelees NR (BD3). Far fewer registrations were made within Pegwell Bay CP area during the transect walks and by the detectors stationed at points BD1 and BD2.
- Soprano pipistrelle. The level of soprano pipistrelle activity was slightly less than for common pipistrelle, with most records from the northern edge of the Baypoint Sports Club site and southern end of Stonelees NR area with averages of between 75.5 and 101.2 passes per night at the three static recording locations in this area.
- Nathusius' pipistrelle. The species was rarely registered during the manual and static activity surveys, with the low number of passes indicating that individuals were more likely to be commuting rather than using habitats within the survey area for foraging activity.
- *Myotis* species. *Myotis species* were only recorded during one of the manual transect activity surveys (T2 on the 26th September 2017). Low levels of activity were recorded at each static recording point,

⁸ Kent Biodiversity Partnership (2011) *The State of Kent's Wildlife* [online]. Available from: http://www.kentbap.org.uk/images/uploads/Kents_Wildlife_Book.pdf

with the highest number of passes recorded at location BD3 at the south end of Stonelees NR/ north side of the Baypoint Sports Club with an average of 11.13 passes per night.

- Big bats were most commonly recorded at the south end of Stonelees NR/ north side of Baypoint Sports Club, e.g. Location BD3 where an average of 27.86 passes per night was recorded for all big bat species combined. Noctule was by far the most commonly recorded big bat species of the three during the static surveys and was the only big bat species recorded during manual transect surveys. Leisler's and Serotine were recorded very rarely with less than one pass per night recorded at any location suggesting that these species are likely to be using the habitats within the survey area as occasional commuter routes rather than for foraging.

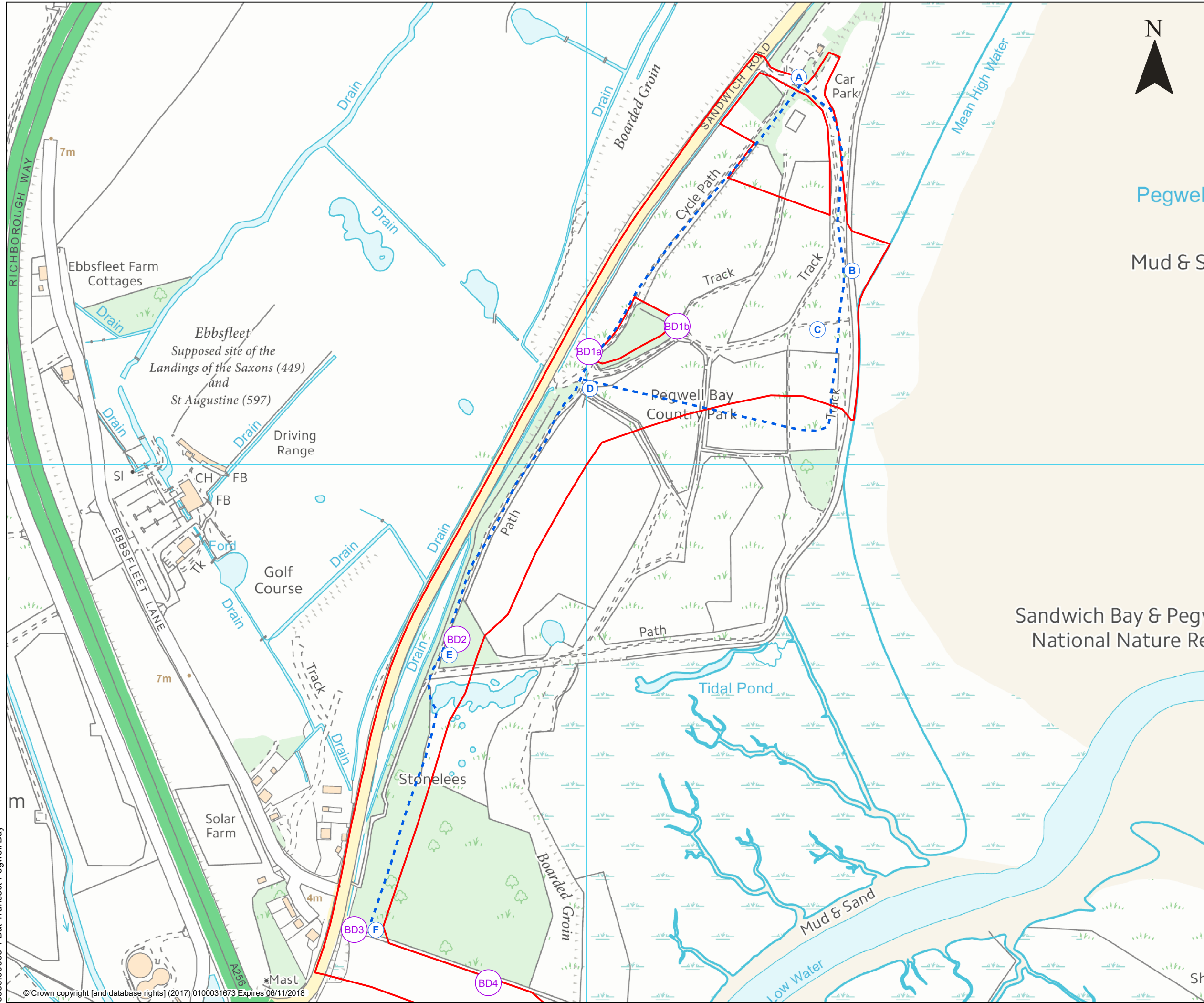
Common and soprano pipistrelle were by far the most commonly-recorded species with other species all recorded much less frequently. Whilst caution should be applied when directly comparing levels of bat activity between recording locations owing to differences in the dates of recording at some locations, the data strongly indicate that the highest levels of bat activity were associated with the woodland edge and tree line along the northern and eastern edges of the Baypoint Sports Club site and southern end of Stonelees Nature Reserve. Activity levels in more open habitats within Pegwell Bay Country Park were generally much lower. The habitats at the southern end of the survey area, including the BCA site and land next to Richborough Port, are dominated by hardstanding, and are not considered likely to be of value to foraging and commuting bats.

DRAWINGS

Drawing 1: Pegwell Bay Transect Route (Transect 1) and Static
Detector Locations

Drawing 2: Baypoint Sports Club Transect Route (Transect 2) and
Static Detector Locations

Drawing 3: Trees with Bat Roost Potential



LEGEND

- SITE BOUNDARY
- BD1 LOCATIONS OF AUTOMATED STATIC BAT DETECTORS
- A STOP POINTS
- TRANSECT ROUTE

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Sandwich Bay & Pegw
National Nature Re

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**THANET OSWF CONNECTION
BAT SURVEY REPORT
PEGWELL BAY TRANSECT ROUTE
(TRANSECT 1) AND STATIC
DETECTOR LOCATIONS**

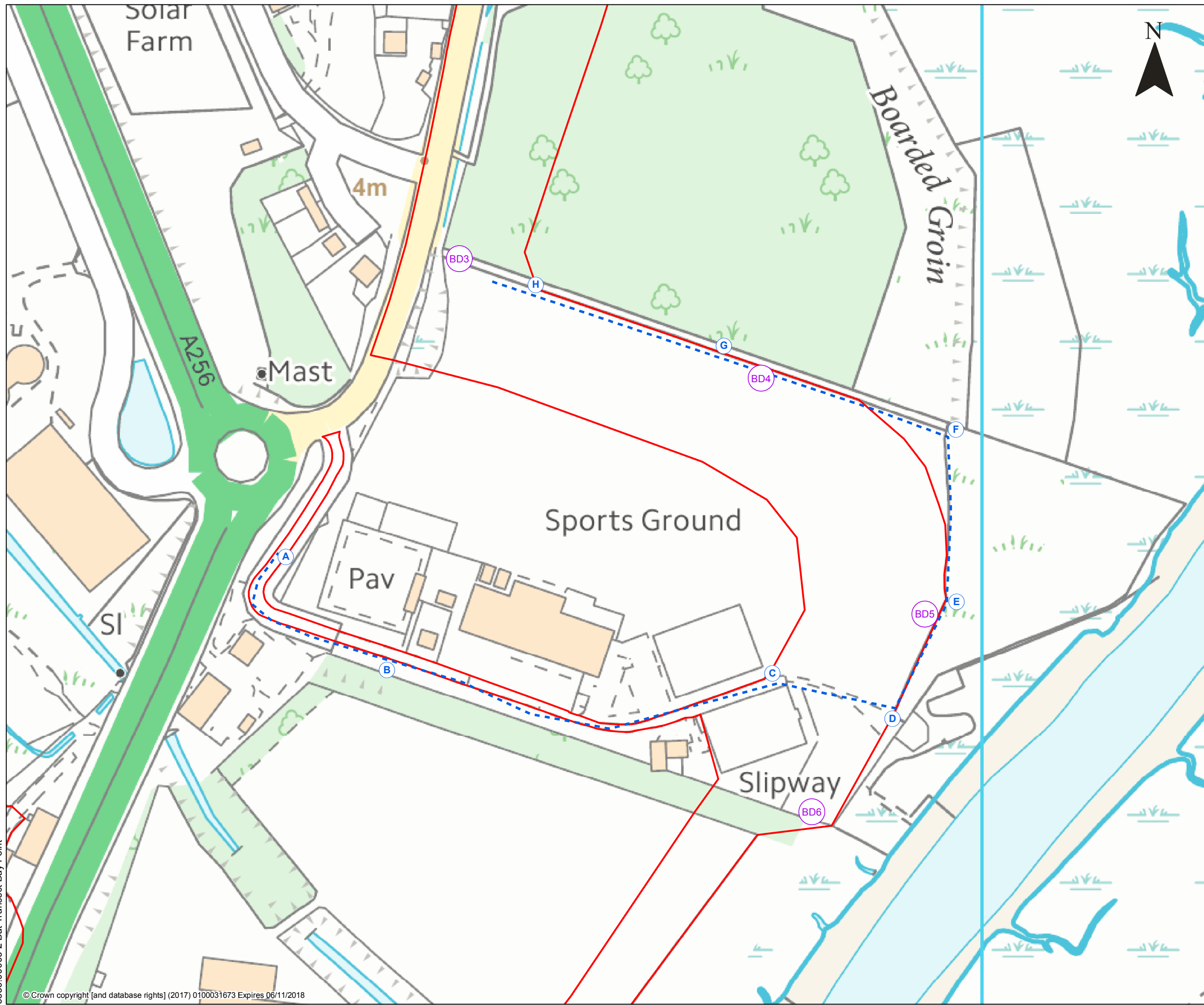
1

Scale 1:4,500 @ A3 Date DECEMBER 2017

5356.00003 1 Bat Transect Pegwell Bay

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LEGEND	
	SITE BOUNDARY
	LOCATIONS OF AUTOMATED STATIC BAT DETECTORS
	STOP POINTS
	TRANSECT ROUTE

5356.00003 2 Bat Transect Bay Point

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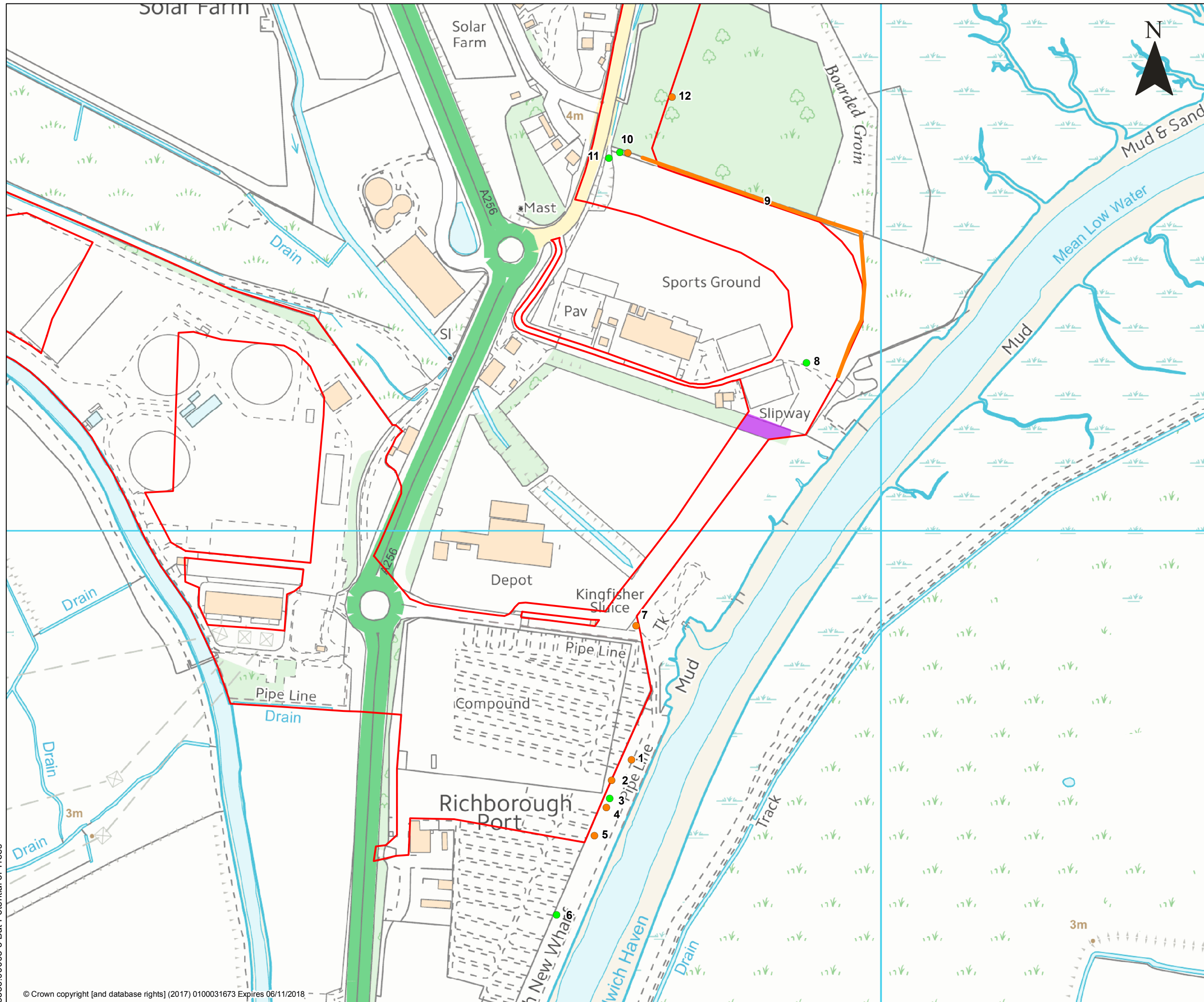
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THANET OSWF CONNECTION
 BAT SURVEY REPORT
**BAYPOINT SPORTS CLUB TRANSECT
 ROUTE (TRANSECT 2) AND STATIC
 DETECTOR LOCATIONS**

Scale	1:2,000 @ A3	Date	DECEMBER 2017
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LEGEND

- SITE BOUNDARY
- TREES SUBJECT TO ROOST SURVEYS

BAT POTENTIAL OF TREE

- LOW
- MODERATE
- MODERATE GROUP

NOTE
 1. THE GROUP OF TREES AT LOCATION 9 WERE NOT ASSESSED INDIVIDUALLY AS IT IS UNDERSTOOD THAT THEY WILL NOT BE AFFECTED BY THE PROPOSED DEVELOPMENT.

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THANET OSWF CONNECTION
BAT SURVEY REPORT
TREES OR GROUPS OF TREES
WITH BAT ROOST POTENTIAL

5356.00003 3 Bat Potential of Trees

APPENDIX 01 - BAT SURVEY DATA

A.1 Assessments of Potential Roost Features in Trees

Table A.1.1
Assessments of Potential Roost Features in Trees

Map Reference (see Drawing 3)	Approximate Grid Ref.	Species	Stem Diameter	Description of PRF and Position in Tree	Tree Category N/L/M/H	Additional Notes
1.	TR33724 61746	White poplar	40cm Diameter at Breast Height (DBH)	4m high east facing woodpecker hole.	M	Safe to climb. Climb and inspect should be undertaken if identified for removal.
2.	TR33702 61723	White poplar	40cm DBH	6m high NE facing woodpecker hole.	M	Safe to climb. Climb and inspect should be undertaken if identified for removal.
3.	TR33700 61703	White poplar	40cm DBH	Ivy clad.	L	No holes seen but ivy could obscure holes. Inspect before removal.
4.	TR33696 61693	White poplar	60cm DBH	Three east facing woodpecker holes at 6m high.	M	Also other splits on tree. Safe to climb. Climb and inspect should be undertaken if identified for removal.
5	TR33683 61662	White poplar	25cm DBH	1.5m high east facing hole pointing upwards.	M	Was checked from ground with endoscope, no evidence of bats found.
6.	TR33641 61574	White poplar	25cm DBH	Ivy clad.	L	Inspect before removal.
7.	TR33729 61895	White poplar	60cm DBH	3.5m high woodpecker	M	Tree located in SE corner of BCA

Map Reference (see Drawing 3)	Approximate Grid Ref.	Species	Stem Diameter	Description of PRF and Position in Tree	Tree Category N/L/M/H	Additional Notes
				hole.		compound. Safe to climb. Climb and inspect should be undertaken if tree works/removal required.
8.	TR33918 62186	White poplar	Various	Multiple woodpecker and rot holes.	L	SE of Baypoint. All holes checked using ladder and endoscope, most upward facing or small. No evidence of bats.
9	TR33953 62170 TR33736 624130 to	Row of Willow sp and Lombardy poplar	Various	Many woodpecker holes and a number of bird boxes.	M	Trees along east and northern edge of sports field. Most were safe to climb and some trees with rot. More detailed survey should be undertaken if identified for removal.
10	TR33720 62419	Lombardy poplar	Various	8 trees. 1 with upward hole 20cm, 1 with upward hole 15cm, 1 with callus roll, 1 with bird box with old birds' nest, others with holes in rotten wood.	Trees checked L Unchecked rotten trees M	NW corner of Baypoint site. Features checked with ladder and endoscope, no evidence of bats found. Rotten trees were not checked as they were unsafe to rest the ladder against. They would also be


Map Reference (see Drawing 3)	Approximate Grid Ref.	Species	Stem Diameter	Description of PRF and Position in Tree	Tree Category N/L/M/H	Additional Notes
						unsafe to climb. Survey prior to any tree works/removal.
11	TR33699 62413	Sycamore mostly	Various	None found	L	Row of trees adjacent to road, no features found.
12	TR33769 62481	Not recorded	Not recorded	Hole in tree facing south.	M	Tree on north edge of path. Re-survey if identified for removal.
As mapped	TR33868 62122 Trees between BCA and Baypoint Sports Centre	Various broadleaved species within scrub	Various	Trees obscured by scrub during the August assessment.	N	Trees were subject to 2 roost surveys, with surveyor on either side. No bats seen emerging or re-entering the trees. Trees were viewed again at the end of the season (following leaf fall); and considered too young and no potential features identified.
N/A	Pegwell Bay Country Park and Stonelees Nature Reserve	Various	Various	No features found. Most trees were too immature to provide features that could be used for roosts.	N - L	No features found.

A.2 Building Assessment

Table A.2.1
Preliminary Building Assessment

Description	Photograph
<p>Ruin located adjacent to the Richborough Port site Location: TR 33760 61869 Overall potential: Negligible</p>	
<p>Due to the level of exposure, the remaining brick work was not considered suitable to support a viable bat roost.</p>	
<p>Baypoint Sports Centre Location: TR 33734 62229 Overall potential: Low</p>	
<p>Front elevation</p> <p>There were limited opportunities provided by vents and flashings. However, these were shallow and did not provide access to an internal void.</p>	
<p>Rear elevation</p> <p>The pitched and tiled roof provides some potential for bats.</p>	

Table A.2.2
Potential Roost Feature (PRF) Inspection

Description	Photograph
Baypoint Sports Centre Location: TR 33734 62229 Overall potential: Low	
<p>The loft space was accessible from the outside, but no evidence of bats was found.</p> <p>Numerous rat and mouse droppings were found during the inspection.</p>	 A photograph showing the interior of a cluttered attic or loft space. The room is filled with various items, including bags, boxes, and debris, scattered across the floor. The wooden structure of the roof is visible, with several beams supporting the ceiling. The lighting is somewhat dim, and the overall appearance is one of disarray and potential pest habitation.

A.3 Tree Roost Surveys

Table A.3.1
Tree Roost Survey Results

Date	Type	Location	Time of observation	Observations	Notes
31/08/17	Dusk (19:43) survey of trees for potential roosts	Baypoint (north side of tree line)	20:35 – end of survey	Common pipistrelle foraged continuously along conifer hedge. Second pipistrelle bat joined the first at 20:44.	Soprano pipistrelle calls registered from 19:42 and common pipistrelle from 20:16. A 'big bat' registered at 20:25.
		BCA (south side of treeline)	19:59	Possible sighting of a bat over the tree belt to the southeast.	N/A Recording on the Baypoint side only was available for sound analysis.
			20:49 to 21:02	Six passes heard of a pipistrelle species	
27/09/17 27/09/17	Dawn (06:55) survey of trees for potential roosts	Baypoint (north side of tree line)	04:51	Bat pass not seen	Common pipistrelle pass registered.
			05:31	Several bat passes, irregular intervals	4 registrations of soprano pipistrelle and 1 pipistrelle species.
			06:08	Pipistrelle species flew around over the grassland foraging, then flew north in the direction of a large willow stand.	7 registrations by soprano pipistrelle between 06:08 and 06:15
			06:15	Soprano pipistrelle heard foraging along the edge of the conifer, then headed north (in direction of the willow)	
		BCA (south side of tree line)	05:36	Bat pass not seen	Soprano pipistrelle registered.
			05:53	Bat pass not seen	Soprano pipistrelle 05:53

Table A.3.2
Automated Static Activity Surveys of Tree Line

Date (night beginning)	Data Analysis – Number of Registrations by Bat Species	Time of first registration after dusk
27/09/17 Approximate dusk ⁹ – 18:47	1 pipistrelle species 8 soprano pipistrelle 68 common pipistrelle 5 Nathusius' pipistrelle 1 Myotis species	n/a 19:47 19:08 20:41 21:18
28/09/17 Approximate dusk – 18:44	9 pipistrelle species 17 soprano pipistrelle 117 common pipistrelle 1 Nathusius' pipistrelle 1 'big bat' species 45 noctule 4 Myotis species	n/a 18:57 19:51 20:57 20:00 19:59 03:20
29/09/17 Approximate dusk – 18:42	22 pipistrelle species 28 soprano pipistrelle 110 common pipistrelle 3 Nathusius' pipistrelle 4 Myotis species	n/a 18:56 19:51 20:19 20:03
30/09/17 Approximate dusk – 18:40	3 pipistrelle species 260 soprano pipistrelle 289 common pipistrelle 1 Nathusius' pipistrelle	n/a 18:57 19:24 20:08
01/10/17 Approximate dusk – 18:37	4 pipistrelle species 331 soprano pipistrelle 151 common pipistrelle	n/a 19:02 19:01

⁹ Based on times quoted online at timeanddate.com. Available at: <https://www.timeanddate.com/sun/uk/london?month=10&year=2017>.

A.4 Manual Transect Activity Surveys

Table A.4.1
Results of Manual Transect Activity Surveys

Date	Type	Location	Time of observation	Location of observation	Observation/s	Analysis of Recorded Data
22/08/17	Dusk (20:01) transect	T1 Pegwell Bay & Stonelees NR	20:19	Stop point E	Common pipistrelle flew northeast over the footpath junction, towards trees to the north.	Not recorded.
			N/A	N/A	N/A	Soprano pipistrelle registered at 20:28.
			20:37	Stop point F.	Four common pipistrelle passes heard but not seen (N/S).	Soprano pipistrelle registered at 20:40 and 20:42.
23/08/17	Dawn (05:54) transect	T1 Pegwell Bay & Stonelees NR	04:56; 05:00	Stop point A; then walk A – B.	Common pipistrelle N/S.	Common pipistrelle at 05:00
			05:27	Stop point F.	Two pipistrelles seen flying from track to base of Poplar line, swarmed for a moment, then flew the tree line.	3 soprano pipistrelle registrations at 05:25.
05/09/17	Dusk (19:29) transect	T1 Pegwell Bay & Stonelees NR	20:17	Whilst walking from stop point E to F.	Pipistrelle species (sp.) seen flying high up (10m). Second pass N/S.	Not recorded.
			20:49	Stop point A.	Pipistrelle pass N/S.	Common pipistrelle pass at 20:50.
06/09/17	Dawn (06:15) transect	T1 Pegwell CP & Stonelees NR	04:35 – 04:44	During walk from D to F, passing E.	Foraging pipistrelle species heard but N/S. Foraging activity continued to be heard along the tree line, but the bat was not seen.	Not recorded.
			04:44 – 04:49	Stop point F.	Two soprano pipistrelle passes, N/S.	13 registrations by soprano pipistrelle between 04:39 –
			04:58 –	Stop point	Soprano pipistrelle	

Date	Type	Location	Time of observation	Location of observation	Observation/s	Analysis of Recorded Data
			05:05	E.	pass. Not seen.	05:09.
			05:08	Walk from E to D.	Soprano pipistrelle foraging along the tree line at approximately 1.5m above ground. Possible second bat, but not seen.	
			05:23	Walk from D to C.	Bat flew overhead from south east to northwest direction, the foraged over the scrub in field. Pipistrelle species heard.	Not recorded.
			05:37 – 05:42	Stop point A.	Two passes by a pipistrelle heard not seen.	Not recorded.
			05:55	Walk between E – F.	Pipistrelle seen flying around the tree tops, at approximately 10m above ground.	Not recorded.
06/09/17	Dusk (19:29) transect	T2 Baypoint Sports Centre	19:57	Stop point E.	Pipistrelle species seen flying along poplars along field edge approx. 1.5m above ground. Two passes.	2 soprano pipistrelle registrations at 19:57.
			20:04 and 20:08 – 20:10	Stop point F.	Pipistrelle species seen foraging along edge of tree line 5 passes of foraging bat circa 2.5 – 3m above ground.	10 common pipistrelle registrations between 20:04 and 20:10.
			20:15 - 20:16	Stop point G.	Pipistrelle species flew west along edge of the tree line, then made return flight in easterly direction, towards the field corner. Two further passes made.	2 common pipistrelle registrations between 20:15 –and 20:17.
			20:36	Stop point F.	Constant foraging by a pipistrelle species along the tree line.	7 common pipistrelle registrations between 20:35 -

Date	Type	Location	Time of observation	Location of observation	Observation/s	Analysis of Recorded Data
						20:37.
			20:43 – 20:48	Stop point E.	Same pipistrelle heard foraging along tree line, but fewer passes made during this stop.	5 common pipistrelle registrations between 20:41 – 20:45.
			20:53	Stop point D.	Pipistrelle species pass	1 common pipistrelle registration at 20:53.
			20:58 – 21:03	Stop point B.	Pass not seen. Numerous passes by pipistrelle species but not seen, with faint calls (possibly foraging on the other side of tree line).	Not recorded.
			N/A			2 registrations by noctule recorded at 21:08
			21:26	Stop point E.	Bat heard foraging N/S.	1 common pipistrelle pass registered at 21:26.
07/09/17	Dawn (06:20) transect	T2 Baypoint Sports Centre	05:49	Stop point F.	Pipistrelle species heard, including foraging activity, with flight seen approximately between 4 and 6m above ground. Bat was seen flying towards trees at the north eastern corner of the field after 2 minutes of activity.	8 soprano pipistrelle registrations from 05:49 – 05:50.
26/09/17	Dusk (18:44) transect survey	T2 Baypoint	19:07	Stop point D.	6 passes heard with possible foraging activity by Pipistrelle species N/S.	1 common pipistrelle registered at 19:07.
			19:16	Stop point F.	Pipistrelle species flew in easterly direction into corner, foraged, turned south then back again. Second and	7 passes by common pipistrelle recorded between 19:16 – 19:19; 2 passes at 19:21.

Date	Type	Location	Time of observation	Location of observation	Observation/s	Analysis of Recorded Data
					third passes bat was seen foraging over the grassland at approximately 2m above ground.	
			19:25	Stop point G.	Pipistrelle species heard foraging	Not recorded
			19:33	Walk between G and E.	3 passes by a pipistrelle species heard but N/S.	2 common pipistrelle passes registered at 19:33
			19:38 – 19:44	Stop point E.	Soprano pipistrelle was seen flying approximately 4m above ground, travelling along the edge of the tree line. Total of 13 passes noted. Other bat species heard but N/S with 4 passes made.	2 common and 3 soprano pipistrelles, and 3 passes by Myotis species recorded between 19:38 – 19:44.
			19:45	Walk between D and C.	Bat seen dipping down during flight.	1 Nathusius' pipistrelle and 3 common pipistrelle calls registered at 19:45.
			19:56 – 20:01	Stop point A.	Pipistrelle species heard once briefly N/S.	Common pipistrelle registered at 19:56.
			20:12 – 20:17	Stop point D.	Two pipistrelle bats heard foraging.	20 registrations of common pipistrelle and 4 soprano pipistrelle between 20:14 – 20:27. Nathusius' pipistrelle call registered at 20:25.
			20:18	Walk between E and F.	Possibly up to 3 bats heard foraging simultaneously, but not seen.	
			20:20 – 20:25	Stop point F.	Pipistrelle species heard foraging, with possibly two bats present N/S. 7 passes heard.	
			20:29-20:34	Stop point H.	Two passes not seen.	
						Two passes by a noctule at 20:30. Soprano pipistrelle

Date	Type	Location	Time of observation	Location of observation	Observation/s	Analysis of Recorded Data
						registered at 20:33
			20:37 – 20:42	Stop point G.	Two passes, first was very high up (approx.20m); second pass not seen.	Noctule pass recorded at 20:38.
12/10/17	Dusk (18:07) transect	T1 Pegwell Bay CP & Stonelees NR.	18:54	Stop point A.	Three pipistrelle passes heard N/S.	No bat calls were recorded.
			19:04	Stop point D.	Pipistrelle species pass heard but N/S.	
			19:21 - 19:32	Walk between E and F.	Up to ten pipistrelle passes were heard, but not seen. Activity seemed to be concentrated within the area subject to the glow of the lighting columns along the adjacent road.	
			19:47	Stop point A.	Two bat passes were heard on arrival at stop point but N/S.	
12/10/17	Dusk (18:07) transect survey	T2 Baypoint	18:43	Stop point F.	Soprano pipistrelle foraging between G and F.	10 registrations by soprano pipistrelle.
			18:46 – 18:52	Stop point E.	Distant calls of pipistrelle species foraging.	4 registrations of common pipistrelle from 18:49.
			18:55 - 19:05	Stop point D.	Pipistrelle heard but not seen.	4 passes by common pipistrelle 19:06.
			19:02 – 19:08	Stop point C.	Three Pipistrelle passes heard but not seen. Bat activity possibly located over the compost heap.	No bat calls were recorded.
			19:13	Stop point B.	Common pipistrelle species heard at the south east point of the car park.	Soprano pipistrelle call registered at 19:10; common pipistrelle at 19:13.

Date	Type	Location	Time of observation	Location of observation	Observation/s	Analysis of Recorded Data
			19:22	Stop point A.	Three passes heard of pipistrelle species.	Soprano pipistrelle registered at 19:21 and 19:22; Common pipistrelle 19:22.
			19:29	Walk between A to H.	Continuous foraging heard along the edge of the nursery playground.	No bat calls were recorded.
			19:39 – 19:44	Stop point G.	Semi -continuous foraging between G and F, passing G with each loop.	
			19:45 – 19:50	Stop point F.	Distant Pipistrelle species heard.	
			19:56 – 20:01	Stop point D.	Four passes by Pipistrelle species to the east of willow tree.	
			20:07	Walk from C to B.	Common pipistrelle pass heard not seen.	4 registrations by common pipistrelle.
			20:14 – 20:19	Stop point A.	Three passes heard of a common pipistrelle, bat probably active near the nursery.	2 registrations by a common pipistrelle at 20:16.

A.5 Automated Static Activity Surveys

Table A.5.1
Automated Static Activity Surveys

Location Reference	Approximate Grid reference	Dates	Data Analysis of Registrations
First automated static activity survey 31/08/2017 – 04/09/2-17. No access to Baypoint Sports Centre			
BD1a	TR 34058 63230	31/08/17 – 04/09/17	No bat calls recorded.
BD1b	TR 34104 63173	31/08/17	1 pipistrelle species 2 soprano pipistrelle 1 Leisler's
		01/09/17	5 common pipistrelle 1 soprano pipistrelle 1 <i>Myotis</i> species
		02/09/17	2 soprano pipistrelle
		03/09/17	1 Nathusius' pipistrelle
		04/09/17	1 soprano pipistrelle 2 serotine 1 <i>Myotis</i> species
BD2	TR 33832 62785	31/08/17 – 04/09/17	Anabat logged on first night only. No calls recorded.
BD3	TR 33719 62426	31/08/17	27 pipistrelle species 58 soprano pipistrelle 83 common pipistrelle 1 Nathusius' pipistrelle 2 'big bat' species 44 noctule
		01/09/17	48 pipistrelle species 166 soprano pipistrelle 59 common pipistrelle 1 Nathusius' pipistrelle 12 noctule
		02/09/17	37 pipistrelle species 219 soprano pipistrelle 13 common pipistrelle 1 Nathusius' pipistrelle 1 'big bat' species 54 noctule

Location Reference	Approximate Grid reference	Dates	Data Analysis of Registrations
			2 <i>Myotis</i> species
		03/09/17	50 pipistrelle species 131 soprano pipistrelle 76 common pipistrelle 1 'big bat' species 23 noctule 4 serotine 3 <i>Myotis</i> species
		04/09/17	152 pipistrelle species 270 soprano pipistrelle 107 common pipistrelle 76 'big bat' species 1 Leisler's 106 noctule 3 serotine
Second automated static activity survey BD1a, BD2, BD4 and BD5 19/09/2017 – 23/09/2017. BD3 26/09/17 – 30/09/17			
BD1a	TR 34058 63230	19/09/17	1 common pipistrelle
		20/09/17	1 common pipistrelle 1 Nathusius' pipistrelle
		21/09/17	1 common pipistrelle 4 noctule
		22/09/17	3 common pipistrelle 1 Leisler's 1 soprano pipistrelle
		23/09/17	2 Nathusius' pipistrelle 1 soprano pipistrelle 1 noctule
BD2	TR 33832 62785	19/09/17	1 'big bat' species 1 noctule
		20/09/17	16 common pipistrelle 9 soprano pipistrelle 1 Nathusius' pipistrelle 2 serotine 2 Leisler's

Location Reference	Approximate Grid reference	Dates	Data Analysis of Registrations
		21/09/17	2 soprano pipistrelle 2 common pipistrelle 1 Nathusius' pipistrelle 6 'big bat' species 2 noctule 1 serotine
		22/09/17	1 soprano pipistrelle 2 common pipistrelle 2 noctule
		23/09/17	1 pipistrelle species 284 soprano pipistrelle 252 common pipistrelle 21 Nathusius' pipistrelle 3 <i>Myotis</i> species
BD4	TR 33854 62376	19/09/17	2 pipistrelle species 51 soprano pipistrelle 21 common pipistrelle 7 noctule 1 Serotine 3 <i>Myotis</i> species
		20/09/17	14 pipistrelle species 41 soprano pipistrelle 12 common pipistrelle 1 Leisler's 3 <i>Myotis</i> species
		21/09/17	14 pipistrelle species 44 soprano pipistrelle 17 common pipistrelle 1 noctule 1 <i>Myotis</i> species
		22/09/17	16 pipistrelle species 53 soprano pipistrelle 10 common pipistrelle 1 'big bat' species 2 noctule
		23/09/17	35 pipistrelle species 466 soprano pipistrelle 502 common pipistrelle

Location Reference	Approximate Grid reference	Dates	Data Analysis of Registrations
			18 Nathusius' pipistrelle 4 <i>Myotis</i> species
BD5	TR 33967 62262	19/09/17	2 soprano pipistrelle 27 common pipistrelle 1 Nathusius' pipistrelle 4 noctule 1 <i>Myotis</i> species
		20/09/17	18 soprano pipistrelle 38 common pipistrelle 2 <i>Myotis</i> species
		21/09/17	2 pipistrelle species 29 soprano pipistrelle 81 common pipistrelle 18 noctule
		22/09/17	9 soprano pipistrelle 6 common pipistrelle 5 'big bat' species 30 noctule
		23/09/17	1 pipistrelle species 679 soprano pipistrelle 1426 common pipistrelle 11 Nathusius' pipistrelle 9 <i>Myotis</i> species
BD3	TR 33724 62417	26/09/17	26 soprano pipistrelle 12 common pipistrelle 8 Nathusius' pipistrelle 1 'big bat' species 5 noctule 1 serotine 2 <i>Myotis</i> species
		27/09/17	1 soprano pipistrelle 1 common pipistrelle 1 Nathusius pipistrelle 7 noctule
		28/09/17	1 soprano pipistrelle 1 common pipistrelle 1 noctule

Location Reference	Approximate Grid reference	Dates	Data Analysis of Registrations
		29/09/17	1 soprano pipistrelle 1 common pipistrelle 14 noctule
		30/09/17	No bats recorded
Third automated static activity survey 12/10/2017 – 16/10/2017			
BD1a	TR 34058 63230	12/10/2017 – 16/10/2017	Anabat logged but no sound recordings registered
BD2	TR 33832 62785	12/10/17	1 soprano pipistrelle 18 <i>Myotis</i> species
		13/10/17	2 soprano pipistrelle 3 common pipistrelle 1 Nathusius' pipistrelle 4 Leisler's 1 <i>Myotis</i> species
		14/10/17	1 pipistrelle species 5 soprano pipistrelle 2 common pipistrelle 4 Nathusius' pipistrelle 1 noctule 4 Leisler's 20 <i>Myotis</i> species
		15/10/17	6 soprano pipistrelle 6 common pipistrelle 4 Nathusius' pipistrelle 1 Leisler's 5 <i>Myotis</i> species
		16/10/17	1 soprano pipistrelle 4 <i>Myotis</i> species
BD3	TR33719 62426	12/10/17	28 pipistrelle species 119 soprano pipistrelle 3 common pipistrelle 2 Nathusius' pipistrelle 5 'big bat' species 3 noctule

Location Reference	Approximate Grid reference	Dates	Data Analysis of Registrations
			2 Leisler's 15 <i>Myotis</i> species
		13/10/17	63 pipistrelle species 214 soprano pipistrelle 302 common pipistrelle 45 Nathusius' pipistrelle 1 'big bat' species 25 <i>Myotis</i> species
		14/10/17	17 pipistrelle species 43 soprano pipistrelle 21 common pipistrelle 31 Nathusius' pipistrelle 19 'big bat' species 20 noctule 3 Leisler's 33 <i>Myotis</i> species
		15/10/17	37 pipistrelle species 91 soprano pipistrelle 22 common pipistrelle 19 Nathusius' pipistrelle 1 'big bat' species 6 noctule 1 Leisler's 57 <i>Myotis</i> species
		16/10/17	8 pipistrelle species 192 soprano pipistrelle 3 common pipistrelle 48 Nathusius' pipistrelle 1 Leisler's 32 <i>Myotis</i> species
BD4	TR 33854 62376	12/10/17	2 soprano pipistrelle 3 common pipistrelle 2 <i>Myotis</i> species
		13/10/17	No bats recorded
		14/10/17	3 soprano pipistrelle 6 common pipistrelle 3 Nathusius' pipistrelle

Location Reference	Approximate Grid reference	Dates	Data Analysis of Registrations
			8 noctule 2 <i>Myotis</i> species
		15/10/17	1 pipistrelle species 40 common pipistrelle 1 Nathusius' pipistrelle 1 noctule 1 <i>Myotis</i> species
		15/10/17	66 pipistrelle species 56 soprano pipistrelle 56 common pipistrelle 2 Nathusius' pipistrelle 2 noctule 3 <i>Myotis</i> species
		16/10/17	1 pipistrelle species 5 common pipistrelle 4 Nathusius' pipistrelle 19 <i>Myotis</i> species
Fourth automated static activity survey 26/10/2017 – 30/10/2017			
BD1a	TR 34058 63230	26/10/17	3 soprano pipistrelle 4 common pipistrelle 3 Nathusius' pipistrelle
		27/10/17	2 Nathusius' pipistrelle
		28/10/17	1 common pipistrelle 3 Leisler's
		29/10/17	1 Leisler's
		30/10/17	None
BD2	TR 33832 62785	26/10/17	2 Nathusius' pipistrelle
		27/10/17	3 'big bat' species
		28/10/17	No bats
		29/10/17	1 'big bat'
		30/10/17	1 common pipistrelle
BD3	TR33719 62426	26/10/17 – 30/10/17	Anabat logged but no sound recordings registered.
BD5	TR 33854 62376	26/10/17	2 pipistrelle species 7 soprano pipistrelle

Location Reference	Approximate Grid reference	Dates	Data Analysis of Registrations
			5 common pipistrelle 2 Nathusius' pipistrelle
		27/10/17	1 pipistrelle species 11 soprano pipistrelle 4 common pipistrelle 1 Nathusius' pipistrelle
		28/10/17	none
		29/10/17	none
		30/10/17	1 Nathusius' pipistrelle

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