SOUTHERN OFFICE
(Registered Office)
Phlorum Limited
Phlorum House
Unit 12, Hunns Mere Way
Woodingdean
Brighton
East Sussex BN2 6AH

T 01273 307167
E info@phlorum.com
W www.phlorum.com

04 December 2023

By Email (harman.sond@pathfinderce.com)
Harman Sond
Pathfinder Clean Energy: PACE
20 Central House Avenue
St Andrews Business Park
Norwich
NR7 0HR

Our ref: RS/10476F_S/LD

Dear Harman:

Land west of Ashwell Road, Bygrave, Baldock, Letchworth, Hertfordshire: Summary of Site Walkover and Letter Report.

The Preliminary Ecological Appraisal (Phlorum, 2023) stated the site held low potential for foraging and commuting bats. Therefore, a series of seasonal bat activity and static detector surveys, during the main activity seasons for bats was recommended.

A singular dusk bat activity transects, and static detector survey was carried out during October 2023. The remainer are recommended to be undertaken seasonally during the 2024 survey season.

Phlorum staff were present at Land west of Ashwell Road, Bygrave, Baldock, Letchworth, Hertfordshire on the 24th of October 2023 in order to undertake a bat activity transect and static detector survey. The weather conditions during the survey were clear, mind and dry.

Current proposals are for the construction of a solar energy farm. The survey area extended over approximately 54 hectares (ha).

Desk Study

Data Search

Records for bats within a 2km radius of the site were obtained from the Local Records Centre (HBIC, 2023) as part of the Preliminary Ecological Appraisal.

The data search showed multiple records of bats from the genera pipistrelle (*Pipistrellus*), long eared (*Plecotus*), myotis (*Myotis*), serotine (*Eptesicus*), and Noctule/Leisler's (*Nyctalus*), within the 2km search area within the past 15 years. There was also a single record for barbastelle (*Barbastella*) within the data search, however, it is not clear when this record was made.

Designated Sites

A search for any Special Areas of Conservation (SACs) that have been designated for bats within 15km of the site was undertaken using Multi-Agency Geographic Information for the Countryside (MAGIC).

The closest SAC is Eversden and Wimpole Woods SAC which is located 16km to the north. The designated habitats/qualifying species of this SAC is barbastelle bat (*Barbastella barbastellus*), in particular there are habitats present to support a summer maternity roost. The majority of the surveyed site does not provide any supporting habitat for this designated site or its qualifying species.

Personnel

The surveys were led by Livia Dry, an ecological consultant with over 2 years' survey experience. Livia has previous experience leading a large number of bat emergency/re-entry and activity transect surveys.

Dusk Activity Transect Surveys

The transect route covered the whole site and included sections within each habitat type present on site. The route was walked clockwise at a slow, steady pace, and all bats seen and/or heard during the survey were recorded. The transect route included six listening points, spaced at regular intervals, at which surveyors would stand for approximately 5 minutes to record bat activity. Each surveyor walked the route twice, starting from opposite positions so that each part of the route was surveyed multiple times at different times for each survey.

The dusk activity transect survey commenced at sunset and was completed in approximately 2 and a half hours. The survey was carried out on a night of appropriate weather conditions for bats, that is a sunset temperature of at least 10°C and no strong wind or rain.

The transect route and listening points are shown in Figure 1.

Static Detector Surveys

A static detector survey was also carried out on site, commencing in October 2023. The survey was carried out during the main survey season for bats. The detector was deployed on the site to continuously record bat activity for 5 consecutive nights.

Anabat Express passive bat detector was used during this survey. The detector was set to begin recording 30 minutes prior to sunset and stop recording 30 minutes after sunrise.

The static detector was deployed on the night of the activity transect survey. The survey was planned with the aim of enabling the static detector surveys to record five consecutive nights of appropriate weather conditions.

The static detector location used is shown in Figure 1.

Constraints

Data Search Constraints

It is important to note that, even where data is held, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest; the area may be simply under-recorded.

Bat Survey Constraints

Bats are mobile animals which can cover a large area within any one night and may travel over different locations on different nights. The recordings from the activity transect surveys reflect a snapshot of bat activity from the survey area only.

The static detector surveys enable a much longer period of bat activity to be recorded and are therefore more likely to identify all species that typically pass over the location of the detector. However, since only bats within close proximity to the detector will be recorded, the results reflect bat activity within a small part of the site only, and bats using other parts of the site may be missed. Data from static detector surveys is also limited since there is no observational context to the recordings.

Bat activity is inherently variable from night to night and is linked to several factors including weather. As such, any given night of survey may not always be representative of average bat activity levels.

However, it is considered that the surveys carried out were sufficiently thorough to assess how the site is typically used by commuting and foraging bats for this time of year.

Dusk Activity Transect Survey Results

Overview of Results

Two surveyors were used the survey. The surveyors walked separately, allowing two separate sets of data to be collected. Echometer Touch 2 Pro detectors were used for the survey.

Throughout the activity transect survey a total of 18 records of bats were made. Some of these included bats seen commuting across the site, with others being bats that were heard but not seen. It was assessed that the site had a low level of bat activity for Autumn.

The location/habitats within the site that had the highest levels of bat activity were:

- The hedgerow/scrub along centre of the southeastern and southern boarders.

The species of bat recorded during the walking transect surveys were:

- **Common pipistrelle**: This was the dominant species during the survey, accounting for 55.55% of the bat records. Common pipistrelles were recorded throughout the survey in different locations.
- **Noctule**: Noctules made up 38.9% of the bat records. They were recorded throughout the survey in different locations.
- **Soprano pipistrelle**: There was one record of a soprano pipistrelle noted in the survey. This was at stop 5, adjacent to an area of scrub along the northwestern boundary.

Number of Surveyors	Site and Job no:	Start/Sunset Time	Finish Time	Temperature (°C) at start	Temperature (°C) at end	Cloud Cover (Oktas 1-8)	Windspeed (Beauforts 1-12)	Rain
2	10476 – Ashwell Road	17:48	20:20	13	11	2	1	None

Surveyor 1: LD Start Location: Starting point A				
Time	**Location**	***Activity observed***	**Number of passes**	**Species and Comments/Notes**
18:24	2	Heard not seen	2	Noctule.
18:26	B	Heard not seen	1	Common pipistrelle.
18:33	B	Heard not seen	5	Soprano pipistrelle.
18:45	3	Heard not seen	3	Noctule.
18:54	4	Commuting	1	Noctule. Flew past on the left along the hedgerow/scrub.
18:57	4	Heard not seen	1	Common pipistrelle.
19:11	A	Heard not seen	1	Common pipistrelle.
19:12	A	Heard not seen	1	Common pipistrelle.
19:23	1	Heard not seen	1	Common pipistrelle.
19:51	4	Heard not seen	1	Noctule.

Surveyor 1: NA Start Location: Starting point D				
Time	**Location**	***Activity observed***	**Number of passes**	**Species and Comments/Notes**

18:01	4	Commuting	1	Noctule. Flew past on the left along the hedgerow/scrub.
18:05	4	Heard not seen.	1	Common pipistrelle.
18:20	5	Heard not seen.	1	Common pipistrelle.
18:43	1	Heard not seen.	1	Common pipistrelle.
19:01	B	Heard not seen	1	Noctule.
19:05	3	Heard not seen.	1	Noctule.
19:22	4	Heard not seen.	1	Common pipistrelle.
19:39	E	Heard not seen.	1	Common pipistrelle.

Static Detector Survey Results

The static detector was deployed on the southwest boundary within the area of woodland (TL 25712 36758) location for a period of five nights. Starting on the 24th October 2023.

A total of eight bat passes were recorded across the five nights. With four of the passes coming from common pipistrelles, three from noctules and one a soprano pipistrelle.

Discussion

During the walked activity transect survey and the static detector survey a total of three bat species were recorded. These were common pipistrelle, noctule and soprano pipistrelle. During the walked transect a total of 18 bats were recorded, and a total of eight records were recorded during the static detector survey. Overall, a low level of bat activity was recorded across the site.

As stated above, further surveys are required to be undertaken seasonally next year in 2024.

Recommendations

As of the first transect activity survey being undertaken the following recommendations are currently being made. However, the final recommendations will be made when all the bat transect surveys are completed:

Lighting

Artificial lighting can alter bat behaviour, with many species avoiding light and some species unable to cross lit areas even with low light levels. Lighting can also create a 'vacuum effect' whereby insect prey are drawn from surrounding habitats to artificial light sources, reducing the foraging opportunities for bats. Species including brown long-eared bats, barbastelles, and myotis species are particularly known to avoid lights. Some of these species have been recorded at the site across a range of locations. Therefore, careful lighting design is required to prevent impacting on the abundance of foraging and commuting bats at the site.

As far as possible, the areas highlighted for high bat activity (see Figure 2) should be kept dark to maintain their value for foraging and commuting bats. It is recommended that dark corridors, with dark buffer zones, are maintained along all hedgerow and tree lines at the site.

During the construction period, works outside of daylight hours which would require use of flood lighting should be avoided wherever possible. Where lighting is required for the proposed development, the following general recommendations are provided:

- The level of any artificial lighting including flood lighting should be kept to a minimum;
- unlit open spaces should be included in the lighting design;
- LED lights are a preferred option to low pressure sodium lights or high pressure sodium or mercury lamps. LED lights do not emit UV radiation, towards which some insects are attracted, drawing them away from bat foraging areas in the surrounding landscape;
- all lights should be directed at a low angle with minimal light spillage wherever possible;
- artificial lighting should not directly illuminate any potential bat commuting areas such as woodland edges or tree lines. Similarly, any newly planted linear features or buffer areas around important habitat features should not be directly lit;
- if security lights are required, then they will be set on a Passive Infrared (PIR) sensor and timer so that the light is only emitted for the short time period required; and
- accessories such as hoods and baffles should be considered to reduce light spill and direct light where needed, but only as a last resort.

Habitat Enhancement

It is understood that all boundary trees and hedgerows around the boarder of the site are to be retained, and therefore will not be directly affected by the development.

It is also understood that a range of habitat creation and enhancements have been proposed, which will include a biodiverse seed mix. This will serve to mitigate for the loss of a arable habitat that may be used by bats and improve the quality of the retained habitat for foraging and commuting bats.

Creation of areas of biodiverse seed mixes, if carried out effectively, these enhancements should significantly improve the site's value for foraging and commuting bats. It is recommended that a Landscape and Ecological Management Plan (LEMP), or similar document, is produced to ensure the enhancements and habitat creation are delivered effectively.

It is recommended that log piles are installed in the woodland edges and areas of open space. Log piles can support saprophytic insects which can provide a food source for foraging bats.

Yours sincerely

Livia Dry
Environmental Consultant

Encs.

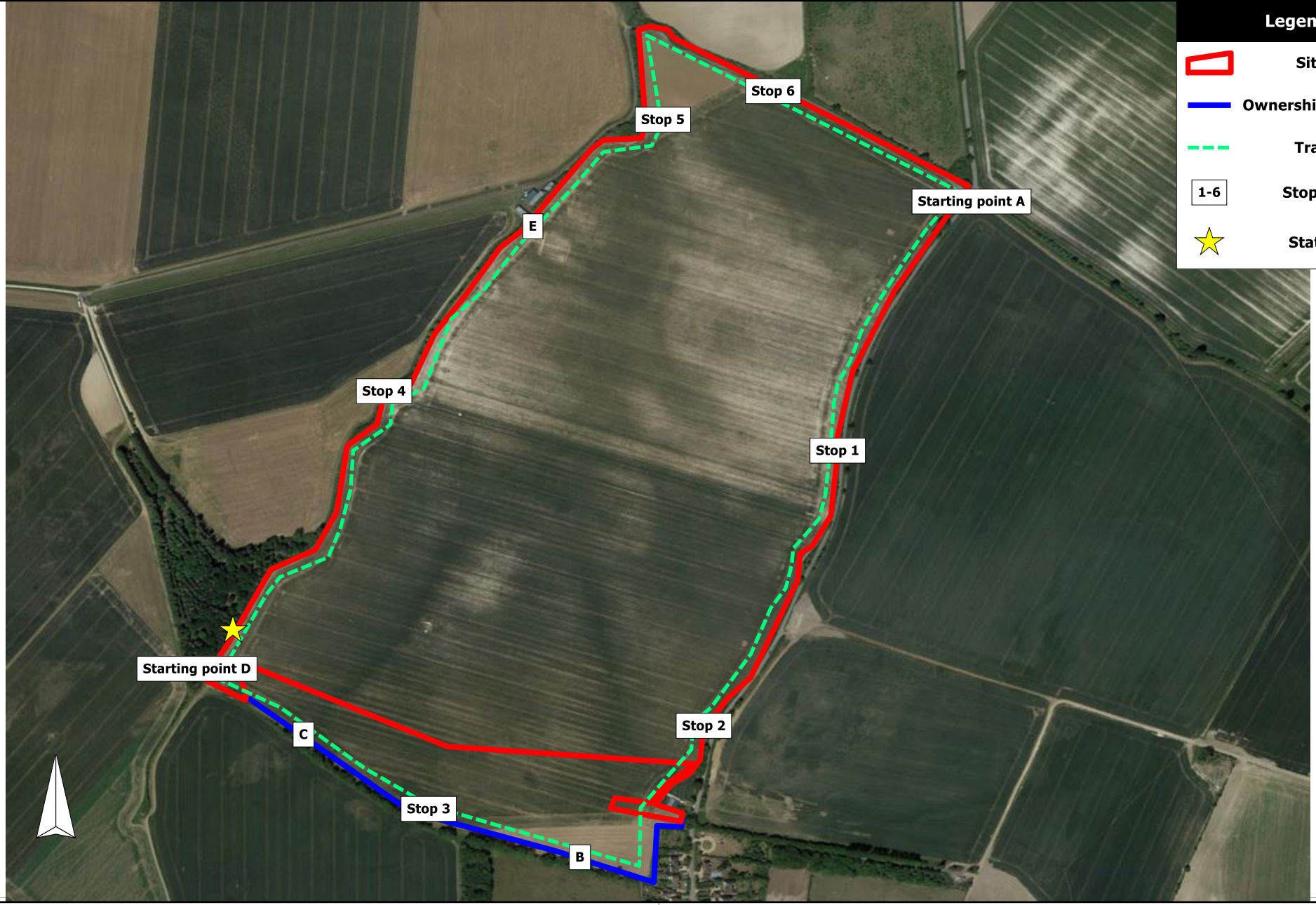


Figure 1: Bat Transect, Habitat Survey Map

Drawn by: LD
On the: 27/11/2023
Not to Scale
Ref: 10476

Phlorum Limited, 12 Hunns Mere Way,
Woodingdean, Brighton, East Sussex,
BN2 6AH
Tel: +44(0)1273 307167
Web: www.phlorum.com
Email: info@phlorum.com

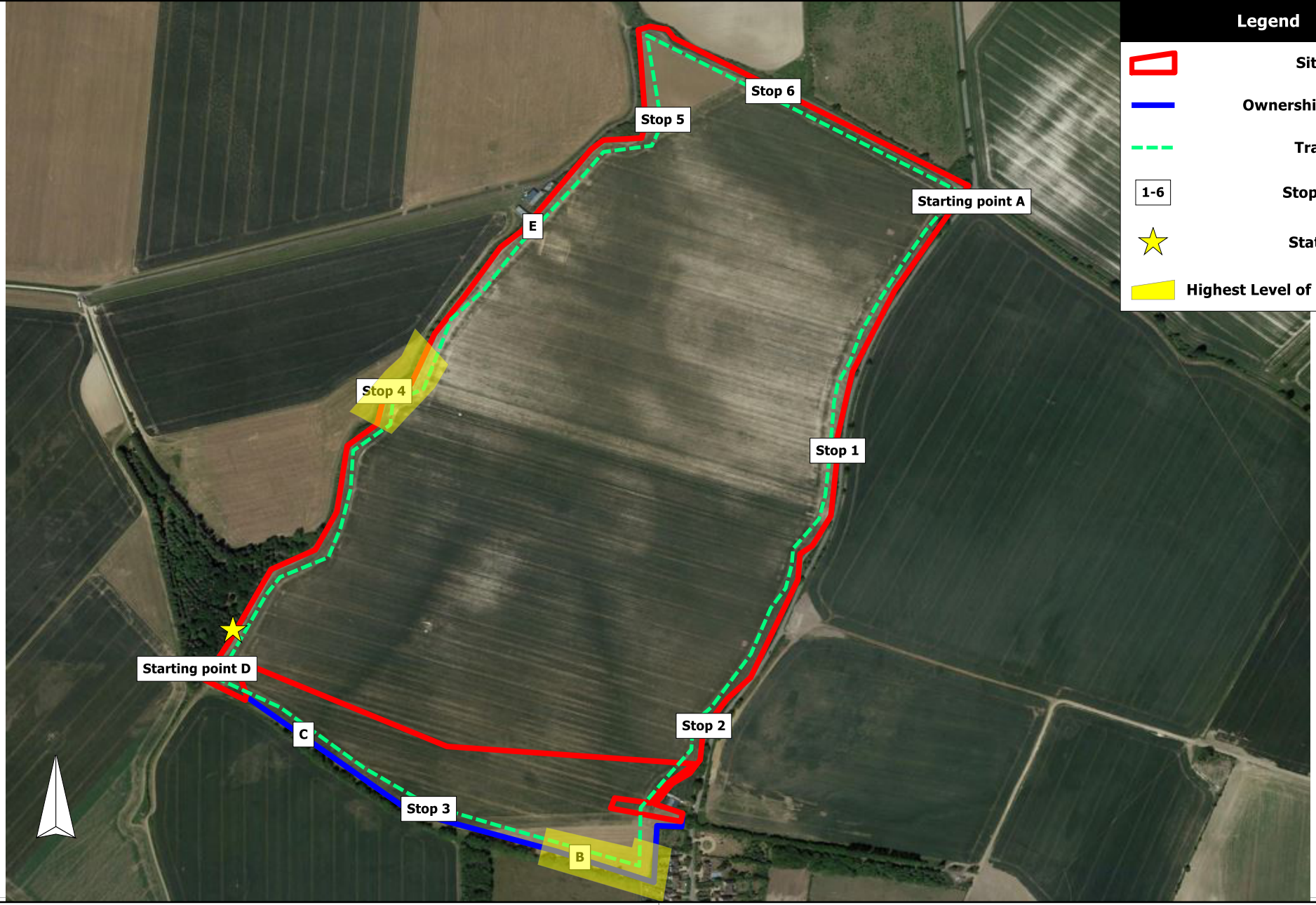
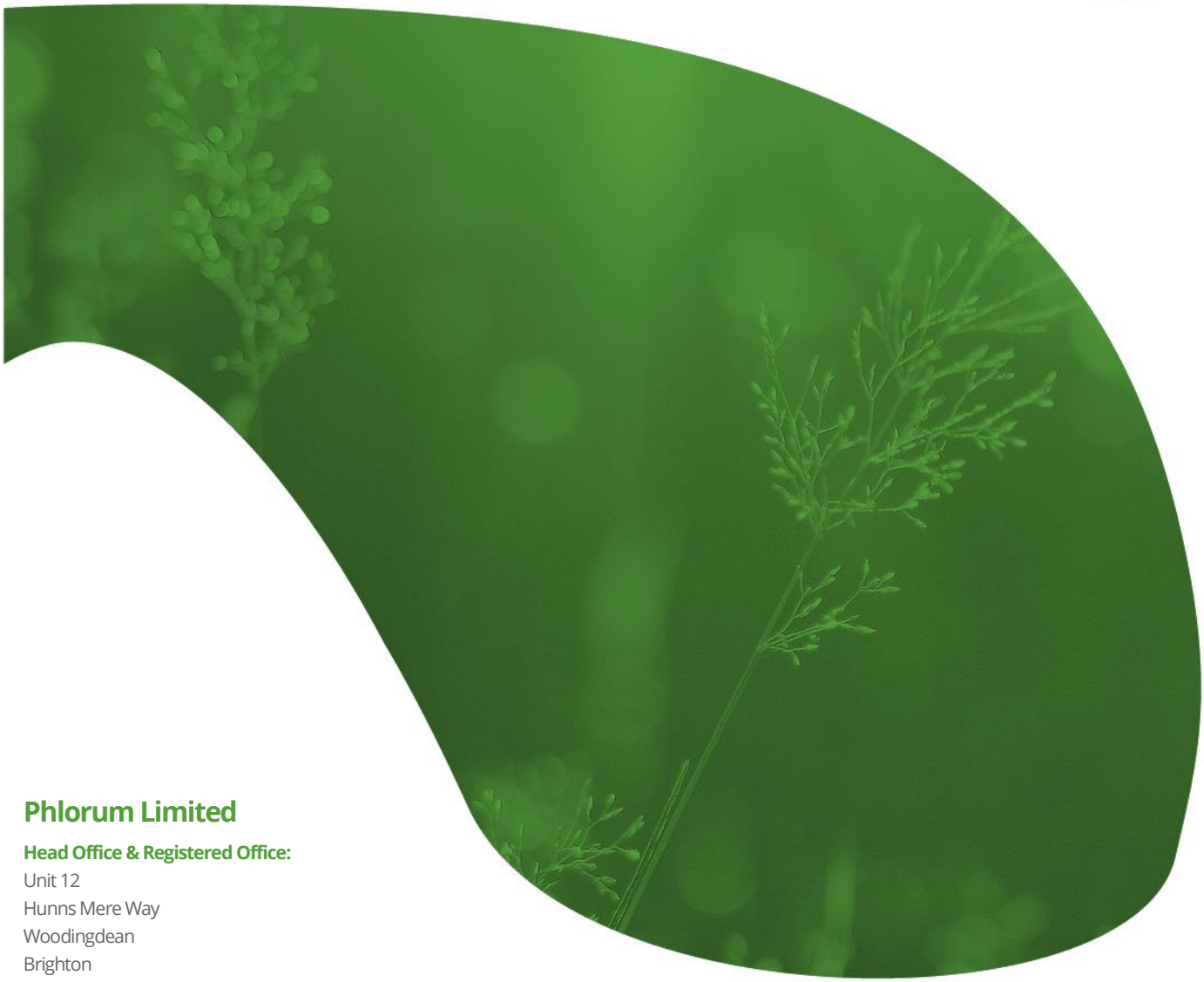


Figure 2: Highest Level of Bat Activity from the transect survey

Drawn by: LD
On the: 29/11/2023
Not to Scale
Ref: 10476

Phlorum Limited, 12 Hunns Mere Way,
Woodingdean, Brighton, East Sussex,
BN2 6AH
Tel: +44(0)1273 307167
Web: www.phlorum.com
Email: info@phlorum.com



Phlorum Limited

Head Office & Registered Office:
Unit 12
Hunns Mere Way
Woodingdean
Brighton
East Sussex
BN2 6AH
T: 01273 307 167

Northern Office:
Ground Floor
Adamson House
Towers Business Park
Wilmslow Road
Didsbury
Manchester
M20 2YY
T: 0161 955 4250

Western Office:
One Caspian Point
Pierhead Street
Cardiff Bay
Cardiff
CF10 4DQ
T: 029 2092 0820

info@phlorum.com
www.phlorum.com

Registered in England & Wales. Reg No. 4967256