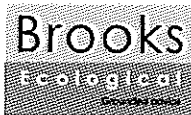


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**Bat Survey and Assessment
Huntroyde Home Farm,
Lancashire**

Report reference: R-1363-03
February 2013

Report Title:	Bat Survey and Assessment Huntroyde Home Farm, Lancashire
Report Reference:	R-1363-03
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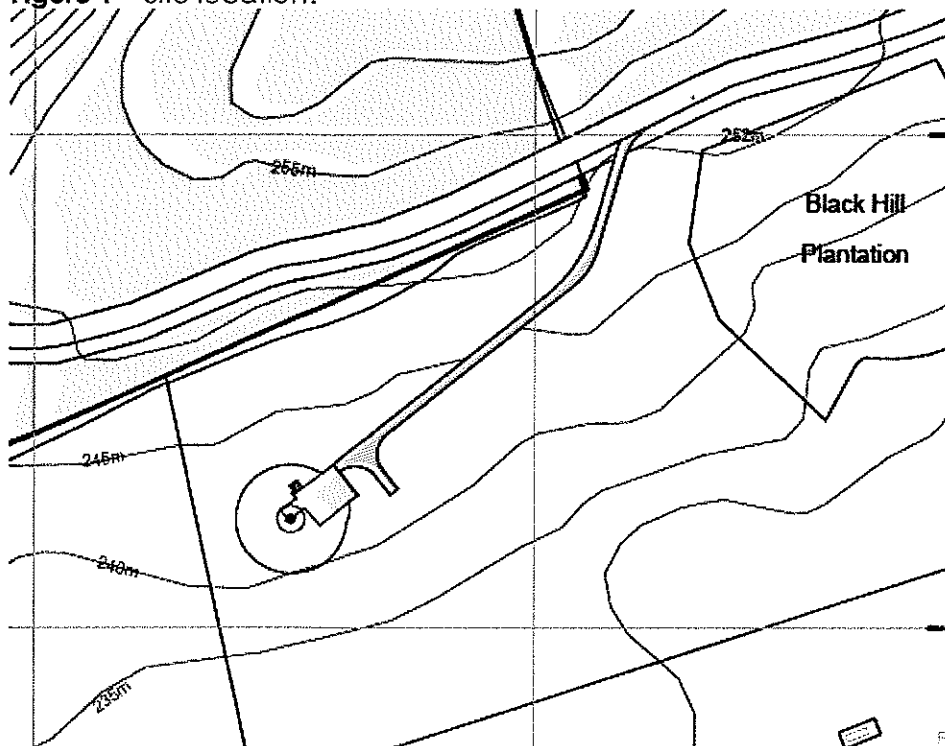
Summary Statement

The proposals would not be expected to impact significantly on local bat populations.

Introduction

1. Brooks Ecological Ltd was commissioned by Empirica Investments to carry out a Bat Survey at the location of a proposed wind turbine at Huntroyde Home Farm, Sabden, Lancashire (SD 781 364). In making our assessment we refer to the proposed turbine location supplied by the client and illustrated in figure 1 below.

Figure 1 Site location.



2. It is proposed to erect a single wind turbine which is 44m to hub and 60.7m to tip. The proposed location of the turbine is shown in figure 1 above.
3. In line with current guidance produced by the Bat Conservation Trust (2012) and Natural England (2012) bat survey started with a thorough study of the site and context of the local landscape. This study is presented in our previous scoping report for the site R-1363-02 and has been used to determine the aims and scope of further study directed at the site.
4. In this instance, scoping concluded that the general landscape is likely to be used by bats in reasonable numbers and the advisory standoff distances

provided by Natural England in their Technical Information Note (TIN051) were applied to the turbine location. Indeed in this instance the location exceeds the required stand-off of 60m by some distance - the nearest habitat feature likely to be used by bats is C.70m from the proposed turbine location.

5. Bats general use of the local landscape being accepted, and measures (following current guidance) having been put in place to avoid significant impacts to these bats, the current surveys do not seek to monitor the use of local features but rather to provide assurance that conflicts at the turbine location are not likely. Guidance aside, such conflicts could still result in offences in relation to bats, and in higher value landscapes such as this, it is important that these risks are thoroughly assessed.
6. A potential issue, on which decisive guidance (such as TIN 051) is not available, is the presence of high risk species such as noctules, Leisler's and Nathusius' pipistrelle bats in the wider landscape. These bats are at more risk due to their high flight which is less associated with defined habitat features obvious on the ground. Noctules in particular are associated with roosts in trees and will commute between woodland blocks / copses - behaviour which can bring them into conflict with wind turbines in some locations. Discussion with Natural England on this point suggests that it is very much down to the consultants experience and judgment as to whether there is a risk to such species.
7. Study of the wider landscape and of the distribution of these higher risk species suggests that the presence of noctule bats in the wider landscape would be expected and that there is potential for them to regularly commute through the turbine site. For this reason further survey has been recommended in order to provide evidence as to whether the proposed turbine conflicts with any regularly used commuting routes.
8. The following scope has therefore been applied to the site:
 - Inspection of nearby features shown on mapping.
 - Walked transects of the site carried out by an experienced surveyor during September
 - Static monitoring carried out in September
9. The aim of this scope being to:
 1. Identify any use of the turbine site by higher risk species

Static Monitoring

Static monitoring

10. A Wildlife Acoustics SM2+ bat detector was left on the site between the 6th and 10th of September 2012.
11. This detector was fitted with long range multidirectional microphones which were positioned as shown in figure 2 below. The microphones were positioned to monitor the levels of bat activity at the turbine location.

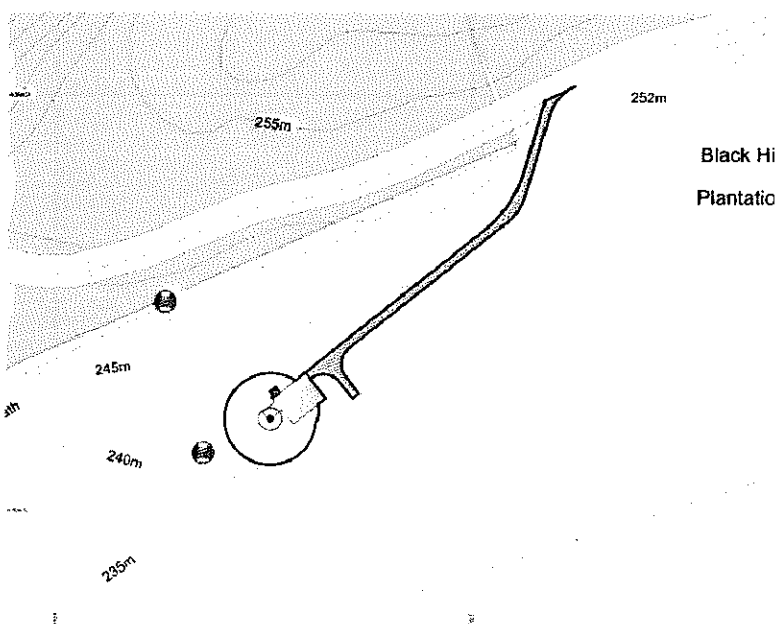


Figure 2

Static monitoring stations is approximately by the red symbols.

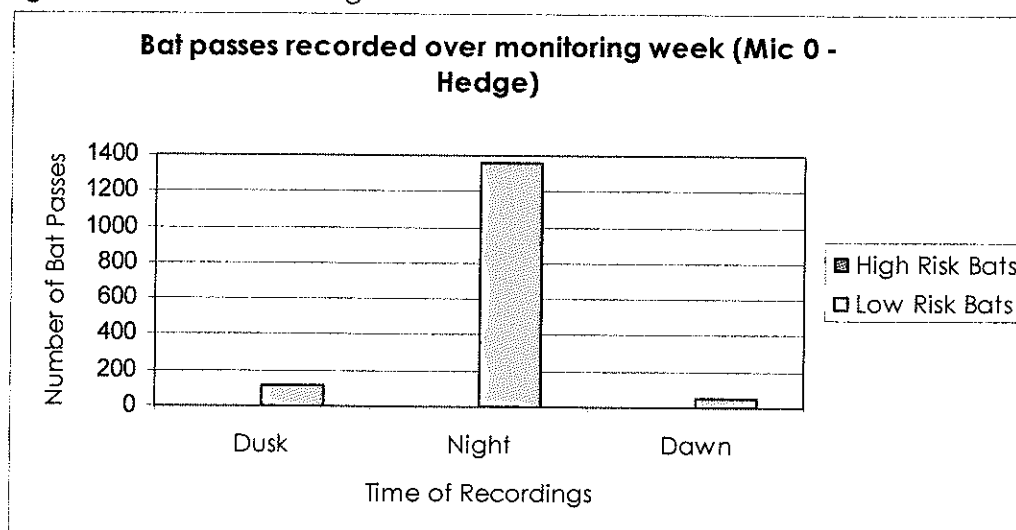
12. Analysis was overseen by Rob Weston BSc (Hons) MSc MIEEM. Rob is a licensed bat surveyor (20120500), has received advanced level training in call analysis, has several years experience in and has delivered training courses to other bat workers in remote recording.
13. Data gathered from the period of static monitoring is presented below.
14. Information presented in the table represents the total number of bat passes recorded over the monitoring period and draws comparisons between the number of high risk and low risks bats using the area. The graph quantifies this difference and presents information on activity periods which could indicate the presence of local roosts.

September static Monitoring – Woodland Edge

Table 1 Bat passes recorded at hedge line

	Time	Time			
		06/09	07/09	08/09	09/09
Passes Recorded at Hedge Line	Low Risk bats	296	443	691	90
	High Risk Bats	1	1	0	0

Figure 3 Time of recordings

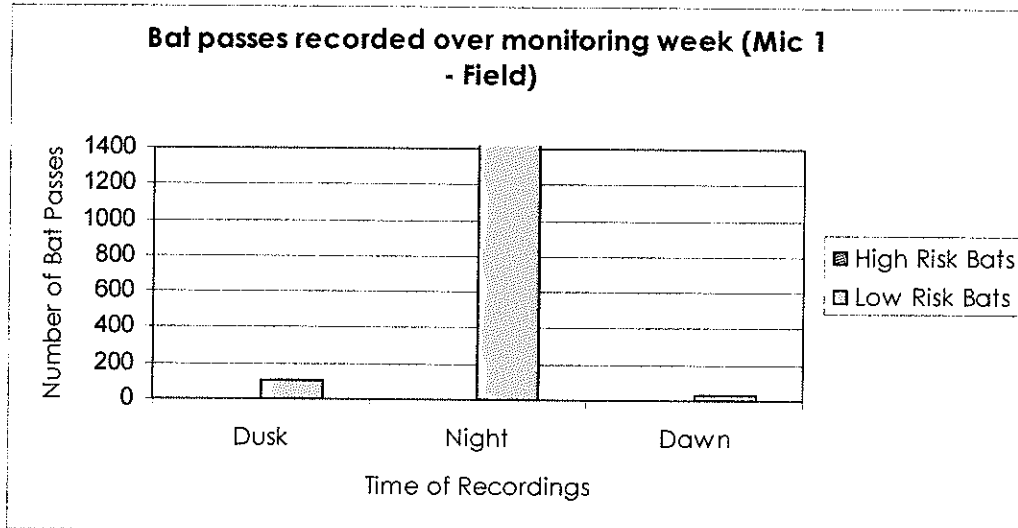


September Static Monitoring – Turbine location

Table 2 Bat passes recorded in open field/ stone wall

Passes Recorded in open field	Time	06/09	07/09	08/09	09/09
	Low Risk bats	155	751	926	97
	High Risk Bats	1	0	0	0

Figure 4 Time of recordings



15. Over the monitoring period three species of bat were recorded; common and soprano pipistrelles and an indeterminate *Myotis* species, all of which are populations at low risk from wind turbines. Only very few of these bats were recorded at the periods around dusk and dawn suggesting limited local roosting.
16. During September monitoring period, microphones were deployed in both the field (but close to a dry stone wall feature) and along the nearby woodland edge line. Bat activity was high along both features suggesting that a stand-off from dry-stone walls is also likely to be effective in avoiding impacts on bats in this area.
17. During the entire monitoring period only three passes by higher risk species (in this case noctule bats) were logged.

Walked Transects

18. These were designed primarily to provide context to the static monitoring results of the turbine site. The transect surveys would be used to identify any local features favoured by commuting / foraging bats and identify commuting routes in and around the application site and its environs. Transects were not used at this site to highlight local roosts or to assess the scale of use of features close to the site as the projects location already accounts for such use.

Table 1 Survey summary

Date of Survey	Temperature	Weather	Invertebrate activity
09.09.12	13°C	Fine and partially cloudy, light wind - Heavy Rain later	Moderate

19. The transect identified in figure 3 below was walked for a minimum of 1 hour.

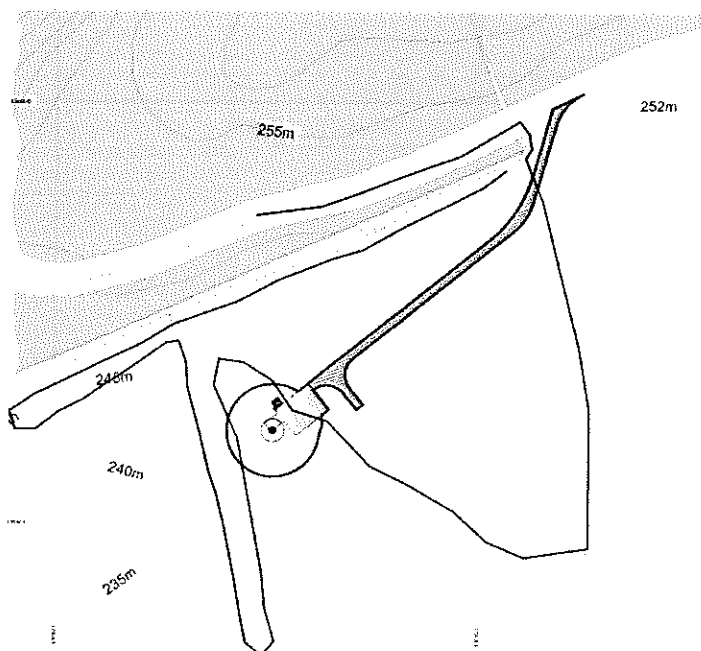


Figure 5

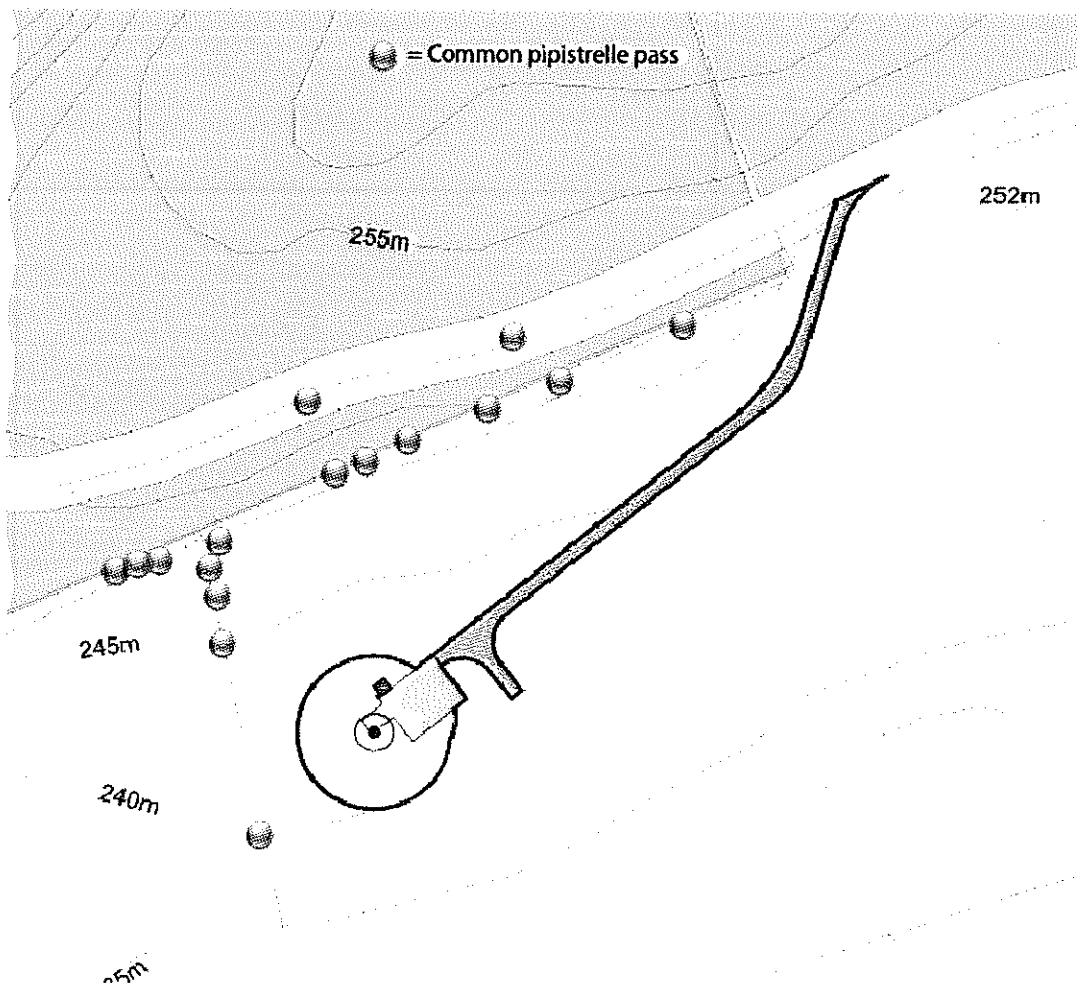
Transect route shown as thick red line.

20. Survey work was directed by Rob Weston BSc (Hons) MSc MIEEM. Rob has many years experience of carrying out bat surveys in a professional capacity and holds

a Natural England license in respect of bats (No. 20120500). He is a member of the West Yorkshire Bat Group, the Bat Conservation Trust and runs training in bat surveys for student ecologists.

21. Bats were identified using a heterodyne recorder and logged manually onto a plan of the site. Figures 5 and 6 below present summaries of the transect results for May and June.

Figure 6 - Transect results September



22. Bat activity was restricted to the woodland edge and the stone wall leading southwards towards Pan Wood. Species detected were limited to individual common pipistrelle bats.

23. This picture confirms the finding of remote monitoring and suggests that bats make frequent use of the edge of Blackhill Wood to the north, and also that they probably use the stone wall running south to navigate towards Pan Wood and Huntroyde Demense.

Evaluation

24. The information gathered would suggest that the site's boundaries are relatively well used by bats but that this use is almost entirely limited to foraging and commuting by common species at low risk (at population level) from turbines. Surveys suggest that their use of the site focuses on the northern and western boundaries of the application field and that standoffs from these features should be applied.
25. Noctule bats are considered to be at a higher risk from the presence of wind turbines due to their flight paths. While noctule bats were recorded on site, the paucity of passes recorded combined with the very sporadic nature of the recordings suggests noctule bats are not regularly commuting past the proposed turbine location. Because of this a significant impact on populations of this species can be ruled out.
26. As would be expected, bat activity is limited to the linear habitats around the site with bats foraging only occasionally into the peripheries of the application site field. Based on results to date it is expected that adherence to the guidelines on stand-off distance in TIN051 (and presented in our report BE-R-1363-04) will be more than adequate to ensure that offences in relation to bats can be avoided.

Recommendations

27. The project should retain the adopted stand-off distance of 60m from significant habitat features. At this site further recommendations are not felt to be necessary in respect of avoiding significant impacts on bats or related offences.



References

Rodrigues, L., L. Bach, M.-J. Dubourg-Savage, J. Goodwin & C. Harbusch. (2008) Guidelines for consideration of bats in wind farm projects. EUROBATS Publication Series No. 3 (English version). UNEP/EUROBATS Secretariat, Bonn, Germany, 51 pp.

Natural England. (2012) *Technical Information Note TIN051 – Bats And Onshore Wind Turbines Interim Guidance*. Natural England Publications, Peterborough.

Bat Conservation Trust (2012) *Bat Survey Good Practice Guidelines 2nd Edition*.