

Comments on Bat Report 2006, Deborah Porter.

These comments are made in the light of discussions with Jacquie Warren, a licensed bat worker and practicing bat consultant with about 30 years' experience in the field. Jacquie advises Cam Valley Wildlife Group.

Introduction

The 2006 Bat report by LDA Design, the developers' Agent, is based upon insufficient, and in some cases completely inconclusive and conflicting, data. Some highly significant data has been gathered, but the most significant indications and implications are either not discussed or discounted.

The way in which the surveys have been undertaken is not sufficiently rigorous or robust to adequately determine value of the site to local bats, including adequate determination of the use by local bats of Kilmersdon Brook, the major area that would be expected to be of use by bats. The data from the static monitor is clearly unreliable and inconclusive and there is a paucity of adequate analysis of the data presented. The conclusions derived are, therefore, unreliable.

The purpose of the report, as accepted within the Ecology Consultation exercise undertaken by NRR, the developers' agents and ecologists, Avon Wildlife Trust and Cam Valley Wildlife Group, was to address the inadequacies of the bat report in the ES and to specifically investigate further the use of the site by Greater Horseshoe Bat. The general methodology and purpose was agreed, but not in detail. The details were left to LDA Design. The way in which the data has been generated and the quality of that data indicates that the purpose of the 2006 survey has not been satisfied. The inadequacies, therefore, remain.

Although claims are made regarding compliance with the Bat Mitigation Guidelines, the survey fails to comply with these guidelines.

Reliability of the static Anabat recordings

The report makes the conflicting claims that the detector continuously recorded between 12 May and 21st September, that recording did not commence until after the first manual bat detector survey, that the first manual survey was on 22nd May, and that there were problems with the Anabat leading it to fail to function on a significant number of days. The view is put forward that the problems with the automated static Anabat are not considered sufficient or robust enough to affect the overall conclusion. However, the data generated by the static detector suggests otherwise. very strongly that either the location chosen was subject to too high a level of extraneous noise to enable adequate detection, that the equipment was more faulty than the report suggests, or that handling of the equipment by non-skilled personnel resulted in its positioning being altered in some way, thus leading to a lack of detection of bats present over the bulk of the survey period. The total number of days in which the report claims that the Anabat functioned correctly is 94 out of the 132 planned. However, the data produced suggests strongly that it was not recording adequately over the vast majority of its operating time.

A function failure of 23 days was recorded in Table 4 for the period 12th to 23rd May, leaving a period of active recording of only 11 days within the first time period, 12th May to 14th June. As on 6 of these days there were no recordings, which would have been consistent with the bad weather around that time, the passes recorded were in a space of 5 days only. The high number of Common Pipistrelle passes contrasts strongly with the absolute lack of recording of Pipistrelles in the 2nd and

4th time slots and with a mere 8 in the 3rd time slot. This is extremely odd. Strange too is that no Daubentons' bats at all were recorded on the Anabat between 15th June and 20th September. They are known to use the site. The 15 June – 11 July time slot (27 days) is a peak time for bat activity, yet there were apparently no bats recorded by the Anabat **at all** in the 17 days of function. This is highly unlikely and contrasts very strongly with the previous recordings, where hundreds of bat passes were recorded by a total of five species in just five days of recording. None of the quieter calling bat species were recorded at all. The data is inconclusive and very significantly this suggests that the Anabat data cannot be relied upon regarding frequency of bat passes and total number of species recorded. Table 4 records that the Anabat did not fail to function on any day and Table 3 states that there were only 23 out of 35 days of recording where no bats were recorded. However, the data set for recorded species shows only one pass by one bat for the whole time period! This is simply not credible. The missing information renders the data utterly inconclusive.

Young bats fly in July and August and before that, you would expect hungry mothers to be often feeding close to home. There are a number of roosts nearby, including a BLE roost in the Victoria Hall, adjacent to the site. It is odd indeed that the numbers of BLE recorded are so low. The 15 June to 11 July data for the static Anabat indicates very likely equipment failure.

The quiet species, such as Brown Long-eared and Myotis species, particularly Natterer's and Whiskered/Brandt's, are conspicuous in their absence after 14th June. The data generated by the static detector suggests very strongly that the location chosen was subject to too high a level of extraneous noise to enable adequate detection on the sonograms produced. It also suggests that the equipment could well have been more faulty than the report suggests, or that handling of the equipment by non-skilled personnel resulted in its re-positioning being altered in some way, thus leading to a lack of detection of bats present over the bulk of the survey period. The person who appears to have been given the responsibility of changing the batteries for the Anabat was not in the employ of the developers' Agent, but was Jeremy Smalley, who is the General Manager of one of the developers, the Norton Radstock Regeneration Company (he was given this responsibility at the end of one of the Ecology consultation meetings attended by Cam Valley Wildlife Group and Avon Wildlife Trust representatives). The river section next to Ryman's where the detector was located is relatively short and includes a small weir, which generates a significant amount of water noise. The detector was located less than two-thirds of the way along this river section.

Sonogram quality is very variable and in certain recording situations extraneous sounds will clutter the sonogram recordings. These both visually (read-out) and audibly mask the sound of bats, which makes Long-eared bats and other quiet species such as Natterer's bats difficult to record. It is also entirely conceivable that stronger Pipistrelle and Soprano Pipistrelle calls were not from the river corridor itself, but from further away in the grassland habitats.

Bat activity surveys should not start until 1 hour after dusk and be carried on for at least two, and preferably three hours after start. The activity surveys on the site were conducted from dusk until midnight irrespective of time of year: when sunset times grow later, so should the start and finish times also correspondingly grow later too. Early in the season, therefore, the recording was at a minimum standard only and was inadequate during the period of peak bat foraging activity. This serves to further degrade the quality of the information gathered.

Recordings of quiet species

The numbers of quiet bats using the site could well be much higher than it appears. Many Myotis species are quieter species, Natterer's and Whiskered/Brandt's particularly so. The report tells us that the Analook programme cannot distinguish between the Myotis species (Natterer's, Daubenton's whiskered. Brandt's). It is not possible to distinguish between Whiskered and Brandt's

bats at all using an Anabat (or any other recorder), yet it is assumed that Brandt's bat is not present. This is not logical. If Brandt's bat is also logically assumed, this would bring the total number of species present to 11. **This is of huge significance.** A total number of 11 species is a significantly high number. In Table 2, no differentiation between Myotis species is made. The total number of Myotis passes recorded in the transect surveys is 37, and a further 18 are recorded by the static Anabat, all in the 5 days that bats were recorded between 12 May and 14 June. There is no differentiation in Table 2 between bat passes heard by the surveyors and bat passes recorded using an Anabat detector. It is not explained how this leads to the conclusion that less than 5 passes have been made by Whiskered bats or why it was assumed that Brandt's bat was not present. Despite the difficulty of recording Whiskered/Brandt's bat, the unreliability of the static Anabat used and the poor practice regarding the transect surveys, the report concludes that Whiskered bats were recorded very occasionally and in low numbers. The low number of Brown long-eared bats recorded, despite the presence of a roost in the adjacent Victoria Hall (and none at all from the static Anabat recordings), is more of a reflection that this species is notoriously often missed using Anabat in particular as they are known to be poor at recording the quiet calls of Brown long-eared bats. If quiet species known to be present on the site have not been recorded, it is possible that further quiet species such as Bechstein's bat have been missed? Contrary to popular belief (even experienced professionals working in an advisory capacity who should know better), Bechstein's bat is not restricted to ancient woodlands, but has been recently found to utilise sub-optimal woodland both for foraging and roosting, albeit that the roosts are smaller. There could be roosts in the local area. Similarly, information series applied to Barbastelle indicate that they are not as specialised as previously thought. Barbastelle bats are very fast when they are flying past and therefore not many calls are recorded as they pass by, making them difficult to record and difficult to identify on sonograms.

Quality of surveys and survey techniques

The purpose of the transect surveys was to provide information about use of the site by bats for foraging purposes, in recognition of the inadequacy of the previous surveys in this respect. Questions over the adequacy of the previous surveys regarding roosting had also been raised by Cam Valley Wildlife Group. The transect survey appears to be more akin to a perimeter walk. It would have been more appropriate to include dissections of the wider space in the wider southern portion of the former railway land area in addition to the circuitous route. Surveys undertaken in July/August 1999 by licenced surveyor David Clarke recorded bats flying in this area. Research on bat behaviour, in particular radio-tracking, has revealed that any of the bats recorded, with the exception of Brown long-eared, which are unlikely to be over open ground, could have been foraging above the open track bed. There is no indication in the report of whether or not the detectors were trained on the peripheral areas (river corridor and cutting), but given the route used it would seem likely. Bat detectors are usually quite focussed regarding the area (direction) in which they pick up sounds. Both Greater Horseshoe and Lesser Horseshoe bats call through their noses in a very directionally focussed band and are difficult to detect as a result. If these bats were foraging over the grassland and the detectors were trained away from the interior of the site, the chances of detecting them would have been very slim. The role that the open areas play in providing a forage resource appears not to have been investigated at all. The 1999 surveys also recorded bats using the far northern part of the site. The 2006 surveys did not investigate this part of the site at all. In addition, the map indicates that the transect walks were taken in the same direction each night, rather than reversed on alternative nights. This is very poor practice. Bats foraging in certain areas at certain times will have been missed due to this.

Transect bat activity surveys should not start until 1 hour after dusk and be carried on for at least two, and preferably three hours after start. However, the 2006 surveys started at dusk and continued

for only a further three hours in only half of the transect surveys. Therefore, the minimum appropriate transect survey time necessary was only achieved half the time - not ideal. In the other five surveys a maximum of only 3 hours and forty three minutes' recording was done in the time slot beyond one hour after dusk, and only one of the surveys achieved near 1 ½ hours. However, even this may be an over-estimate as the start times seem rather early for dusk. This gives a total of surveying in the appropriate time slot for the ten transect surveys of fourteen hours at best – a disappointing level. Importantly, four of the five short times are the August and September surveys, and the fifth was on the 5th July was for one hour only, thus not even entering the appropriate time slot. This renders the transect bat activity survey data for all but May and June of very limited use and insufficient to record the foraging activity of the site beyond June anywhere near adequately. The Anabat data for July and August is inconclusive at best. The combination of this means that the importance of the site to young bats flying in July and August is likely to have been overlooked.

Although there was static monitoring by Rymans Engineering, there was no static monitor in the Kilmersdon Brook corridor running the majority of the length of the site. Therefore, the only meaningful data set for this very important corridor is from the transect walks of May and June and one in late July. This is insufficient to determine use of the more major area for bats. Greater Horseshoe bats are more likely to be recorded by riparian habitats, so the deficiencies in the transect surveys is significant regarding likelihood of detection of the use of the site for commuting and foraging by this species, especially in combination with the problems with the static Anabat detector. Put simply, the data presented for transect walks is simply insufficient to serve its purpose.

Deficiencies in analysis

No attempt to identify social calling has been made in any of the sonogram analysis, which shows a very poor standard of analysis technique applied. Social calling is known to be carried out by many species of British bats and is understood to be an indication of territorial and breeding behaviour and so would shed some light on the use of the site by bats and its importance to the species using it.

There is no differentiation between the Analook and audible transect results which could be problematic. Analook identification cannot always distinguish between a quiet bat close up and a loud bat far away and no system can distinguish definitively between the various *Myotis* bats. It is not, therefore, shown which records are the more dependable.

The high numbers of Common Pipistrelles emitting social calls in September indicates that the site may well host a number of males with mating territories. **The significance of social calling has not been identified at all in the report.**

The report pays insufficient attention to the significance of the discovery of Nathusius' Pipistrelle on the site. Nathusius Pipistrelles can be definitively identified from a sonogram and are not at all common in the UK. The timing of the recording indicates they are likely to be local residents, roosting in the locale. If they were passing through, it would have been much earlier in the year, around March/April. They are likely to be under-recorded, but are still thought to be a rare species. The number of known maternity roosts in the UK is very low, perhaps below ten. Leisler's bats are also far less common than their close relative the Noctule and are also notoriously difficult to separate from Noctule by Sonogram alone.

The report concludes that Nathusius's Pipistrelle and Leisler's bats were recorded very occasionally and in low numbers. However, the deficiencies and limitations of the surveys and recording are of a magnitude that casts doubt on the number and frequency of Nathusius Pipistrelles, Leisler's and

Whiskered bat records in the surveys. **The surveys and analysis are not sufficiently rigorous or robust to support the claim that this does not affect the overall evaluation of the assessment of the bat resource as presented in the ES.**

The ES points out, in Chapter 6, (6.6.107 & 6.6.108) that the results of former surveys and Greater horseshoe bat behaviour suggests that use of the site by this species is likely to be primarily restricted to late summer/autumn use. It is considered in the ES that the site does not provide a regularly used commuting route or foraging resource and the magnitude of the adverse effect and proposed mitigation is based upon this assumption. **The 2006 report concludes that the results prove that there is little or no Greater Horseshoe Bat activity on the site – but the lack of recordings of these species, given the nature of the surveys carried out, places this statement into some doubt.** Radio tracking data to the site suggests that it is used by Greater Horseshoe and Lesser Horseshoe bats and the surveying both by transect walking and by static monitoring undertaken was not adequate to determine this. Lesser Horseshoe and Greater Horseshoe bat calls are both very focussed and easy to miss by a recorder, static or otherwise. Greater Horseshoe bat could turn up at any time on the site, but is more likely to be using it when the favoured prey is not available, ie outside the time when they are catching Cock-chafers and Dung beetles. Greater Horseshoe bat could be present in June/July feeding on crane flies from the grassland areas of the site, for example. Further, to this, Greater Horseshoe may be present in some years and yet not in others. The assumption made is rather rash and indicative of insufficient grasp on these bats' ecology and behaviour on the part of the author.

The report concludes that the mitigation presented in the ES will be more than sufficient to mitigate for the likely impacts of the scheme on all the bat species recorded during the 2006 survey. However, Brown long-eared Bat is particularly sensitive to light-spill and is likely to be adversely affected by light from residential properties and street lighting, which is particularly significant in the context of this site, as there is a known summer/breeding roost of Brown long-eared bats in the Victoria Hall adjacent to the site and this species has recently been added to the UK Biodiversity Action Plan Priority species list due to decline. Brown long-eared bats are far more tolerant of temperature variation than other bat species and so often have less need to move from their summer roosts to separate winter quarters. This will have a bearing on the importance of this site for the individuals using it, the number of which will be significantly under-recorded using the methodology and equipment employed for this survey.

The data provided, although incomplete and inadequate, does show that the site has importance to bat breeding and that it supports at least one additional particularly significant species, Nathusius Pipistrelle. The occurrence of ten or more species of bat on the one site is a highly significant number of bats.

The claim is made that the mitigation in the ES will be more than sufficient to mitigate for the likely impacts of the scheme on all bat species recorded during the 2006 survey. I would take issue with this statement, as the mitigation proposed in the ES was considered inadequate by Cam Valley Wildlife Group (after taking expert advice) and by Avon Wildlife Trust and the deficiencies of the previous surveys, that the developer accepted, have not been addressed. The mitigation proposed is still too vague to be able to determine its likely effect. No mention is made of the number of roosts provided, which species will be catered for and where the roost sites will be placed within the development or how they are likely to be managed. Without sight of the finalised Ecological Mitigation and compensation Strategy and the Section 106, it is not possible to say what the effect and adequacy of the mitigation and compensation measures will be and which species will be catered for. The further information in the ES not only adds species not considered in the ES, including Nathusius Pip, but also adds some knowledge regarding the site's importance to breeding

bats. The importance of the site to Greater Horseshoe bats, Lesser Horseshoe bats (which have not been considered at all), and to breeding Brown Long-eared bats, now a UK BAP Priority Species, has not been established. The issue of lighting is particularly important for Brown long-eared bats, which are particularly sensitive to light-spill. Lights must be shielded from the foraging areas and not be mounted on high level posts, and lights cannot be placed close to foraging areas or roost sites provided. Brown Long Eared bats emerge late and prefer total dark. This is of particular significance due to the proximity of a summer breeding roost. The ES states that the previous survey results indicate that the roost in the adjacent Victoria Hall is a long-standing maternity roost.

Conclusion

The 2006 Bat Report does little to address the deficiencies of the initial bat report in the ES. The data generated by the static detector suggests strongly that there were significantly greater problems than anticipated and suggested in the report and the transect surveys were inadequate- they were not carried out in alternating reverse order, the nature of the evidence found was not comprehensive enough and the analysis of the data was poorly carried out. The purpose of the further survey work in respect of Greater Horseshoe Bats set out in the ES in Appendix 6.4 was to determine the impact the development proposals would have on the commuting and foraging of this endangered species. The purpose of the 2006 surveys as discussed with in the Ecology consultation meetings was wider than this. The way in which the work has been undertaken is not up to a standard that is likely to have shed further light on use by Greater Horseshoe Bat¹. Conclusions regarding this species are, therefore, speculative. The presence of bats is likely to be significantly under-recorded, particularly for the quieter species, and it is entirely possible that a greater number of species of bat than ten or eleven is present. A count of ten species for a site is highly significant in itself.

The lack of frequency and lack of numbers of bats recorded is unsurprising given the obvious deficiencies of the surveys. **Despite the deficiencies of the surveys and the inadequacies of the resulting report, there is some important information of value presented.** The presence of **Nathusius's Pipistrelle** at the time of year recorded is not only undeniable, but also highly significant due to the rarity of this species and the potential importance of a breeding colony in the local area. As only a handful of breeding roosts are known in the country, the presence of this bat on this site is arguably of national significance. The likelihood that **Common Pipistrelles are displaying breeding behaviour in the Autumn** on this site is also of significance, as an indicator of the proximity of a suitable roost or roosts and the high quality of the forage resource on the site. **The number of species known to be present and the real possibility of higher number than that is highly significant.**

The previous surveys and report were not robust and this one is not robust either. However, **the 2006 report does present new and significant information that has not been specifically taken into account in the ES, particularly in the presence recorded of Nathusius Pipistrelles. Whilst this new information may not have made any difference to the mitigation and compensation package proposed, it may have made a difference to the decision that the socio-economic value outweighed the harm to nature conservation.** The facts remain that the reports are not sufficiently rigorous to adequately determine the importance of this site to the various species of bat present or the use of the site by them, and the proposed mitigation (particularly regarding lighting on lamp posts that prevent upward spill only)² and the proximity of residential dwellings to Kilmersdon

¹ This was the original intention expressed within the ecological consultation meeting in which the additional investigations were decided upon. This included, but was not restricted to, use of the site by Greater Horseshoe Bat.

² I would expect low-level lighting (like big cats eyes) for pedestrian safety or shielded lights on 1m posts, shining

Brook will have a decidedly detrimental effect on bats on the largely inadequately investigated Brook corridor with the lack of static detector, one-way circuit for transect survey, and limited coverage of hours after '1-hour-after-dusk'.

END

29/07/08