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Lesser Horseshoe Monitoring

Northern Quarter

Cinderford

Daniel Whitby
2015

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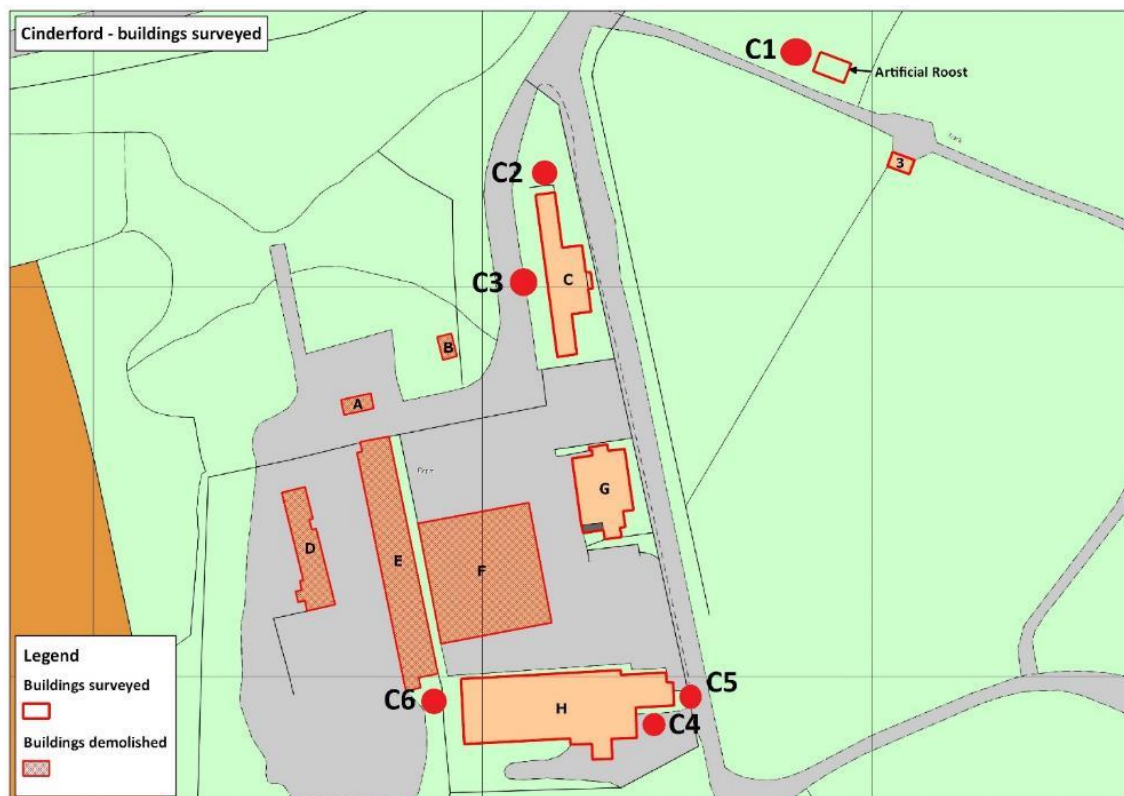
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1 Introduction

- 1.1 AEWCLtd. was commissioned by the Forest of Dean council to conduct monthly monitoring surveys of all buildings present at the Northern Quarter site from April 2015 through to October 2015.
- 1.2 These surveys are a continuation of monthly surveys conducted at the site by AEWCLtd. from July 2013 and by other consultancies prior to this.
- 1.3 This report provides the results of the surveys conducted to date at the site by AEWCLtd since January 2015 to October 2015. The results of this monitoring are intended to be used to inform for any proposed development of the site and to be used with licence applications for this site.

2 Method

- 2.1 There are 5 structures that are surveyed each month by licenced ecologists, the bath house, canteen building, office building, woodland shed and artificial roost. The same survey methodology has been used as was used by AEWCLtd surveys from July 2013 to ensuring consistency of data gathered.
- 2.2 Surveys are conducted once each month with all buildings surveyed on the same day to ensure accuracy of surveys and no bats are moving between buildings being re-counted.
- 2.3 Each month internal surveys are conducted on the bath house, canteen building, office building and woodland shed, the Artificial roost is only surveyed internally during colder months from October to April due to the high levels of disturbance this would cause to the main maternity roost colony during summer months and inaccuracy of using this survey method with high numbers of active bats present.
- 2.4 During summer months from April to October emergence surveys were conducted using night vision cameras and IR illuminators to enable the visual identification of bats emerging from the building in low light and dark conditions which are otherwise impossible to count the bats present. Recording was conducted at all identified emergence locations from the Bath House, Office building and artificial roost and recordings watched back to accurately count the numbers of bats emerging. Night vision cameras See plan 1



Plan 1 – showing 6 camera locations (C-office building, G-canteen building, H-Bath House, 3-woodland shed)

Lesser horseshoe emergence counts.

- C1- Camera located on artificial roost emergence point.
- C2- Camera located on the North end of office (Building C) covering roller doors.
- C3- Camera located western side of office (Building C) covering dormer entrance.
- C4- Camera located covering the southern emergence point in the south eastern area of the Bath House, bath house emergence point A (Building H).
- C5- Camera located covering the eastern emergence point in the south eastern area of the Bath House, bath house emergence point B (Building H).
- C6- Camera located covering the western emergence points of the bath house (building H) bath house emergence points C + D.

3 Results

- 3.1 During 2014/15 there has been observed a steady increase in LHB numbers despite the previous year's notably poor weather conditions and documented reduced breeding success. Trapping surveys at the roost sites in 2013 did identify that there were unusually high proportions of male bats present using the roost sites, however these surveys cannot identify the sex of bats present to identify if this has continued into recent years.

Monthly observations

April 14th 2015 – during this survey no non LHB species were identified. There was again one bat in the canteen. Of the other Lesser horseshoe bats one in the office was ringed and 4 in the artificial roost were ringed.

May 18th 2015 – During this survey the artificial roost was checked and repaired as the entrance had been damaged, additionally another surveyor had surveyed the site on the 16th.

In the bath house 2 LHB were found, one bat was in the cupboard and one in the far west small room near emergence area. In the office 2 active bats were in the main roof and 7 torpid ones in the drying room. During the emergence survey bats entering the east end of the bath house reached a peak of 9, before 3 emerged with 4 emerging from the western end. At least 1 bat was still present inside the building on the camera.

The Artificial roost had only 158 bats present, this is considered low and notably less than the NBN surveyors 221 two days earlier.

June 15th 2015 – a total of 8 LHB were present along with one Bechstein's in the toilet block and one GHB in the very eastern closed door entrance. There was only one LHB in the main cupboard and 4 in the very eastern small cupboard, one in the toilet block and one in the western large room, one additional bat was active. In the bath house the LHB were noted to be unusually distributed, which may have been due to the presence of a GHB in the building.

The office had 26 bats present, 10 in main roof, 13 in second roof and 3 in storage room. A total of three of these bats were identified as ringed.

There were no bats found in the canteen or woodland shed.

During the emergence survey it was noted that there were a number of bats initially entering the bath house eastern end with 6 enter before any emerged, however, during the whole survey there was an overall of -14 as 37 entered and 23 emerged. The western end had 10 bats emerge so more bats were inside the building, or emerge from the unseen emergence points.

July 10th 2015 – in the bath house the Bechstein's was present again in the same place. Of the 17 most bats were back in the cupboard with one in the toilet block and 3 in the large main room. In the Canteen one Natterer's was present roosting around a pipe in the ceiling.

At the end of the survey of the artificial roost it was noted that there was still very high activity and there were still a high number of bats present. And internal count identified 96 adult individuals were present internally.

August 11th 2015 – in the bath house the Bechstein's was present again in the same place and a Brown long-eared was present in the electrics room. Of the 8 LHB 4 were in the cupboard, 2 in the large main room and 2 in the small eastern cupboard. In the Canteen one Natterer's was present roosting around a pipe in the ceiling.

The office had a number of active bats making an accurate count difficult however, there were 16 in the main roof, 2 which had pups attached. 3 in drying room and 9 in the rear roof. One Brown Long-eared was also in the main roof ridge.

The woodland shed had no bats present.

September 15th 2015 – in the bath house the Bechstein's was present again in the same place and there were 4 LHB, all solitary individuals. One in each of the 2 small cupboards, the main and eastern one. One LHB was in the western cupboard in emergence room and one in the entrance hall.

In the Canteen one Natterer's was present roosting around a pipe in the ceiling, however this was a different one in the dark south east room.

The office had 16 bats present, a juvenile male common pipistrelle was roosting in the door frame, 2 LHB in the main roof, 5 in rear and 8 in drying room.

The woodland shed had no bats present.

During the emergence survey it was noted by the surveyor that 3 Common pipistrelle bats emerged from the southern side of the Bath House just west of the S/E emergence locations.

October 15th 2015 - in the bath house the Bechstein's was unexpectedly present again in the same place and there were 4 LHB, some in new areas not observed being used before. Two were in the main cupboard, one in the asbestos room and one in the main central room.

In the Canteen one Natterer's was present roosting around a pipe in the ceiling, the same one as last month in the dark south east room.

The office had 14 bats present. An unidentified bat was present under the ridge tile at the southern end, this was most probably a Pipistrelle based on size and colour but moved out of sight. 1 LHB in the main roof, 2 in rear and 10 in drying room.

The woodland shed had no bats present.

The Artificial roost had high numbers that were now roosting in the ground floor and in torpor in the loft area outside the hot box, however, 42 bats were still present in the hot box and 6 ringed bats were observed present.

3.2 The results of the internal counts are shown in table 1, note that the Artificial roost was not internally counted on due to the very high number of bats present during this time which would be very disturbing, as well as the inaccuracy of this survey method with such high numbers of active bats present, therefore for these months there is no total. The emergence survey results are shown in table 2, note that for some locations more bats were identified entering a building than emerging and as such this has a negative number.

Table 1
2015 - internal counts

Building	Area	January 19th	February 13th	March 11th	April 14th	May 18th	June 15th	July 10th	August 11th	September 15th	October 15th
Artificial roost	small room+stairs	8	15	18	17	NA	NA	NA	NA	NA	31
	large ground	17	7	37	85	NA	NA	NA	NA	NA	69
	upstairs	5	5	8	8	NA	NA	NA	NA	NA	NA
Shed oposite	Artificial roost	0	0	0	0	0	0	0	0	0	0
Office	main roof	0	0	0	0	2	10	1	16+BLEB	2+p.pip	1+Bat
	second roof	0	0	0	2	0	13	21+BLEB	9	5	2
	storage room	0	0	0	19	7	3	3	3	8	10
Canteen		0	0	1xM.n	1	0	0	M.n	M.n	M.n	M.n
Bath house		2xBLEB	1xBLEB	0	5	2	8+Mb+Rf	17+M.b	8+M.b+BLEB	4+M.b	4+M.b
Total LHB		30	27	63	137	NA	NA	NA	NA	NA	NA

BLEB-Brown Long-eared bats

M.b – Bechstein’s

R.F - Greater Horseshoe

P.pip – Common Pipistrelle

Bat – unidentified species

Table 2 - Emergence survey counts

	14th April	18th May	15th June	10th July	11th August	5th September	15th October
1-artificial roost	111	158	319	289+96	506+13	326	241
2-roller door, office	6	1	4	0	4	5	NA
3-dormer, office	14	6	12	26	25	10	NA
4-east hole, bath house	-2	-8	-16	5	-2	0	NA
5-south east hole,bath house	0	-1	2	1	1	0	NA
6-west holes, bath house	6	4	10	8	6LHB +1Vesp	5	NA
Total	135	160	331	425	547	346	NA

3.3 The total peak counts of Lesser Horseshoe bats using each building and the total for the site is shown in table 3. Generally the number of bats present using the Northern United buildings is low, especially during the hibernation period where there is only the very odd individual present. The bottom of table three shows the percentages of the number of bats identified each month using the two main buildings on the Northern United site, the Office and the Bath House.

Total Lesser horseshoe only counts for each building 2015

	January	February	March	April	May	June	July	August	September	October
Artificial roost	30	27	63	111	158	319	385	519	326	251
Shed oposite	0	0	0	0	0	0	0	0	0	0
Office	0	0	0	21	9	26	25	28	15	13
Canteen	0	0	0	1	0	0	0	0	0	0
Bath House	0	0	0	5	2	8	17	8	4	4
Peak Total	30	27	63	138	169	353	427	555	345	268

% LHB in Bath House	0.0%	0.0%	0.0%	3.6%	1.2%	2.3%	4.0%	1.4%	1.2%	1.5%
% LHB in Office	0.0%	0.0%	0.0%	15.2%	5.3%	7.4%	5.9%	5.0%	4.3%	4.9%

4 Constraints/Limitations

- 4.1 The bath house has a number of potential access points for lesser horseshoe bats, and more for other species, however, many of these are not visible from the ground and are not safe to access, such as the collapsed roof, for this reason there is a good chance that bats may emerge from this building unrecorded, however the main emergence points are monitored.
- 4.2 The bat numbers on the site fluctuate notably, not only throughout the seasons but can change notably from one month to the next, and, it is believed from one day to the next. Each survey only acts as a snapshot in time and gives an indication of the numbers of bats using the site, however, numbers present may fluctuate daily with bats moving to other sites.

5 Discussion

- 5.1 The counts in summer of 2015 are notably higher than the previous year. The 2015 surveys have identified a new colony maximum recorded population of 555 individuals, this is up from 432 the previous year.
- 6.1 The peak count on the site in 2014 was 417 on the 18th July 2014 survey which was notably higher than the 355 recorded on the 30th August the previous year by 62 bats or 17.5% higher.
- 6.2 The 2015 count of 555 recorded on the 11th August is 123 individuals higher than the previous year, a growth of 28%
- 6.3 The number of bats using all the Northern United buildings has remained notably low over the 2015 season, with a peak in 42 in July, representing 9.9% of the colony present (see table 3)
- 6.4 During the last year (November 2014 – October 2015) the average percentage of the colony using the Northern united buildings was 5.9% which is considered to be low.
- 6.5 During the 2015 hibernation period from January to March no bats have been identified using the Northern United buildings as a hibernation site.
- 6.6 The artificial roost is still by far the main roost site and the vast majority of bats on the site are using this building and as an average over 94% of bats are using this one building over the last year. This is also the main building on the site used by hibernating bats with very few bats ever found using any other buildings.
- 6.7 The Office is the next most used building, notably during mid-summer when a peak of 28 lesser horseshoe bats were found present in July which was only 5% of the population present on the site at that time. This is lower than were found in previous

years. During hibernation from December to March only 1 single lesser horseshoe bats was found on site.

- 6.8 The Bath house like the office building is used by lower number of bats, and was not been found as being used by any lesser horseshoe bats from December to March similar to last year. During 2014 the peak number of bats using the bath house was 17 in July, which represents 4% of the colony present at that time.
- 6.9 The canteen and the woodland shed are only used very infrequently by very low number of lesser horseshoe bats, the woodland shed had no bats present in 2015 and the canteen had only one lesser horseshoe bat present on one occasions. However, the surveys have also identified an increased level of use of the Canteen by a Natterers bat, with one individual present on 5 occasions.
- 6.10 The 2015 surveys have identified consistent use of the Bath house by the solitary Bechstein's bat, this was identified present in the same location on five occasions from June to October and this bat has roosted here for three years. The Bath house was additionally used on one occasion by both a Greater Horseshoe and a Brown Long-eared demonstrating low level use by these species.