

BAT SURVEYS
in
BERWICK-upon-TWEED
May to September 2007

**A report on surveys at
Ravensdowne and a Farm Steading,
Summerhill Terrace and Spittal,
Ord Country House Park and
a section of the River Whiteadder
by
Berwick Wildlife Group**

ACKNOWLEDGEMENTS

The following members of Berwick Wildlife Group took part in the survey work: Fiona Aungier, Juliet Aungier, Susie Aungier, Maurice Aungier, Elizabeth Bamford, Leslie Cook (licensed bat worker), Molly Hardie, John Inglis, Philomena Johnson, David Johnson, Sue Maddox, Bob Maddox, Maurice McNeely, Priscilla Simpson, Enid Turnbull and Margaret Williams.

This report was written by, and the accompanying sketch maps were prepared by Leslie Cook, apart from the map for Ord House Country Park which was based on a caravan layout plan provided by courtesy of the management of the Country Park.

INTRODUCTION

The bat surveys conducted by Berwick Wildlife Group in 2007 were located within Berwick, and at Spittal and East Ord: the Group also assisted an ecological consultant with an 'emergence' survey at a location outside the town, and north of the River Tweed.

The surveys were carried out broadly in accordance with the procedures outlined in the Bat Workers Manual, third edition, Walsh and Catto, 2004.

Heterodyne bat detectors were used to assist with the identification of bat species.

AIMS OF SURVEYS

The purpose of surveying bat populations includes the discovery of bat sites and the mapping of species distribution, key bat roosting/hibernating sites and feeding areas.

Locally, the principal aim is to ask what bat species are present within the borough of Berwick-upon-Tweed, in an area extending from the Scottish Border to Scremerston and from the coast inland to the trunk road, route A1. Such information is important because it can be related to land use and it helps to determine the relative value of areas for bats. The data obtained can also be used to assist in the process of Environmental Assessment, and for issues of planning and land use. Reports of bats from locations outwith the study area are also investigated to extend the knowledge of bat populations throughout North Northumberland.

Where a survey establishes the presence of bats, the next stage is to discover, if possible, where roosting sites and feeding areas are located: hibernating sites are difficult to find and may only be revealed during the course of building works or some forestry operations such as where there is a need to remove dead trees, beyond the normal breeding season. Such knowledge improves our understanding of bat ecology, and helps to identify sites requiring special protection. All activities likely to affect bats in any way are very strictly controlled by statutory legislation.

Continued monitoring of sites is important for tracking how sites and bat numbers are changing over time, so that declines in and potential threats to populations can be identified at an early stage. Tracking changes in the distribution of species over time is also a valuable method in assessing the status of populations.

SURVEY RESULTS

Survey No. 1

The results from bat surveys in 2006 around the section of the Ramparts from Cleet Court to the Barracks identified a fair amount of bat activity spanning the area from the Ramparts ditch across gardens to the rear of the houses on upper Ravensdowne. The level of activity suggested the possibility of a bat roost existing in that locality. The first survey attempted to confirm this speculation.

17th May The focus of the survey - an 'emergence' survey - was the garden ground to the rear of houses on the east side of upper Ravensdowne - at No. 66, where two surveyors were stationed, and at St Cuthberts' Roman Catholic Church where three surveyors were located: to detect any cross-street activity, the road was covered by a further two surveyors.

Bat activity was first noted about 21.45, in both gardens. The high, garden walls at No. 66 made determination of flight lines difficult, but there was an indication that bats may have been coming from the garden on its northern side. Greater activity was noted in St Cuthberts' garden, with flight lines seeming to come from the direction of the lower part of Ravensdowne, sweeping over into the large garden plot next to the Magazine site that backs onto the Ramparts. It is likely that these bats also ranged over the garden of No. 66 which, together with surrounding gardens, probably formed a general feeding area. There was no evidence of bats crossing to the west side of Ravensdowne, and they did not fly beyond the pathway between the Ravensholme hotel and the public allotments.

Calls recorded were of the common pipistrelle (*Pipistrellus pipistrellus*)
(See sketch map no. 01/07)

Survey No. 2

Members were afforded the opportunity of assisting an ecological consultant with an 'emergence' survey at a large farm steading, with surveys being conducted over four evenings during the breeding season, commencing at the end of May.

- 31st May The first 'emergence' survey coincided with a very cold spring evening: surveyors were happy to have hats, scarves and gloves with them. The first bat to emerge appeared about 21.45, seeming to come from the direction of the nearby farmhouse, and was followed by one or two others, traversing the southerly frontage of the steading and, on occasion, entering the open-fronted cattle courts, empty of livestock but retaining straw bedding, almost certainly productive of insects and providing a somewhat warmer environment in which to feed. The bats also flew along the west elevation, adjacent to which was a boundary hedge, with some small trees. Other bat calls, seemingly separate from the foregoing recordings, were registered at the north-east corner of the steading, possibly flying in from a row of cottages to the north of the site and some 200 metres distant.
- 21st June The second survey was bedevilled by even more unpleasant weather, being wet as well as cold. This probably accounted for bats not appearing until about 22.30, and then in very low numbers. Beyond confirming the presence of bats, the results did not add, materially, to the intelligence gained from the first evening survey.
- 19th July The unseasonable, summer weather continued to the third survey when cool, windy conditions were encountered, probably influencing a late emergence at about 22.20. The survey detected responses along the south and west elevations, but later, when concentrating on the north-west corner, where gaps in the masonry walling appeared to show brown staining underneath, surveyors detected no bats.
- 26th July The final survey enjoyed slightly better weather, although still cool. While previously noted bat activity, and flight lines were again recorded, a connection with the row of cottages was established as bats were traced traversing a low hedge, from the direction of the cottages, to a detached hayshed containing some hay or straw, that was being used as a feeding area. Bat calls heading towards the cottages suggested a direct return journey across open pastureland. As before, emergence was around 22.30.

At none of the surveys did any bats emerge from the steading.
Again, the bats detected were the common pipistrelle.
(See sketch map no. 02/07)

Survey No. 3

In following up the 2006 bat survey at Summerhill Terrace and the 'green triangle' of parkland between the Terrace and Berwick's railway station, it was hoped to confirm the location of a bat roost, presumed to be somewhere along the eaves of the east elevation of the Terrace.

7th June Two surveyors were positioned in the garden of No. 3 Summerhill Terrace, while two others were located behind the Terrace in the rear garden of No. 2 North Road. The remainder of the group was disposed within the 'green triangle'.

No bats were detected anywhere near the frontage of the Terrace, as they had been in 2006. Instead, occasional pipistrelle bat calls were noted within the 'green triangle', seeming to be crossing from the railway fence line, where there are some small trees, to the mature trees at the foot of Summerhill Terrace gardens.

At the conclusion of the survey, a few very soft calls were detected around trees next to the public roadway, opposite the former Toll House. These calls could not be confirmed because of traffic noise, but there could be a connection with calls recorded there in 2005.
(See sketch map no. 03/07)

Survey No. 4

Members of Spittal Improvement Trust joined with members of Berwick Wildlife Group to widen coverage for the presence of bats in the Albert Road/Cow Road area of Spittal.

12th July The first bat calls were detected above the railway level crossing on the Cow Road. These were from an adjacent field, immediately to the west of the road and in the vicinity of a new bungalow. The flight lines headed in a south-easterly direction, towards an old quarry site in which a new house has been recently built. Other calls were noted in the field next the railway line, opposite the old quarry site: it is likely that this whole area is a feeding site for a nearby roost.

Further bat activity was detected in the garden ground of a house below and to the east of the Cow Road, where there is direct footpath access to Spittal Main Street. Flight patterns were not determined, but

the location of this site is not far distant from the 'Spa Well' site which was previously surveyed in 2006, when some bat activity was recorded.

(See sketch map no. 04/07)

Survey No. 5

A survey in the Cornwall Avenue area of East Ord in 2005 located a colony of pipistrelle bats that appeared to be using the grounds of Ord House Country Park as a feeding area. That site contains a continuous perimeter belt of trees (a dog walk) and it was felt that a survey around the boundary would offer the opportunity to detect possible bat roosts elsewhere around the perimeter.

9th Aug Early in the survey of the perimeter walk, bat calls were first noted at a location very nearly at the Cornwall Avenue roost site. The bats seemed to be flying into the Country Park and were feeding along the tree-line frontage that opened to the parked caravans. Frequent calls continued to be recorded as far as a distinct 'break' in the east boundary, thereafter becoming intermittent, then petering out, with only a single bat call being recorded along the southern boundary.

No bat calls were recorded on the west boundary until its mid-point, where a narrow avenue of trees crosses the site, almost to the east boundary. Here, bat calls were recorded along the avenue and for a further 50 metres towards the offices/reception/restaurant buildings. These latter calls appeared to be from bats crossing the boundary to the adjacent housing estate in East Ord village.

Bats were later detected on the roadside verge on the north boundary.
(See sketch map no. 05/07)

Survey No. 6

This Quayside survey attempted to discover any connection between those bats active in the area of the Governor's Garden (2006) and anecdotal evidence of bats along the Quay Walls and the Love Lane/Bankhill areas.

23rd Aug Only a single bat call was detected along the lane leading towards the former lifeboat house (now a dwelling house) where there remain a few shrubby bushes and trees on the cleared Quayside site.

Pipistrelle bat calls were detected at the lower end of Bankhill, at its junction with Love Lane. There were also one or two bat calls on the steep pathway leading from Bankhill down to the New Road at the Rowing Club boathouse.

Although no bats were detected in Love Lane, a reliable report was received that one had been seen in the garage/car parking courtyard off the Lane earlier in the evening.
(See sketch maps nos. 06A/07 & 06B/07)

Survey No. 7

Following a report of bats in the vicinity of New Mills by a holidaying bat worker from Leicester, the River Whiteadder was surveyed from Whitedder Bridge (Canty's Brig) to New Mills.

30th Aug Bat calls were immediately detected by surveyors crossing the bridge that carries the public highway. These were Daubenton's bats (*Myotis daubentoni*), and more calls, including a number of pipistrelle bat calls, were detected in the area from the end of the bridge upstream to the last of the new bungalows.

At New Mills further upstream, pipistrelle bat calls were registered around storage buildings where there is reputed to be a roost, although one could not be detected. More Daubenton bat calls were recorded on the river immediately below the cauld at New Mills.
(See sketch map no. 07/07)

Survey No. 8

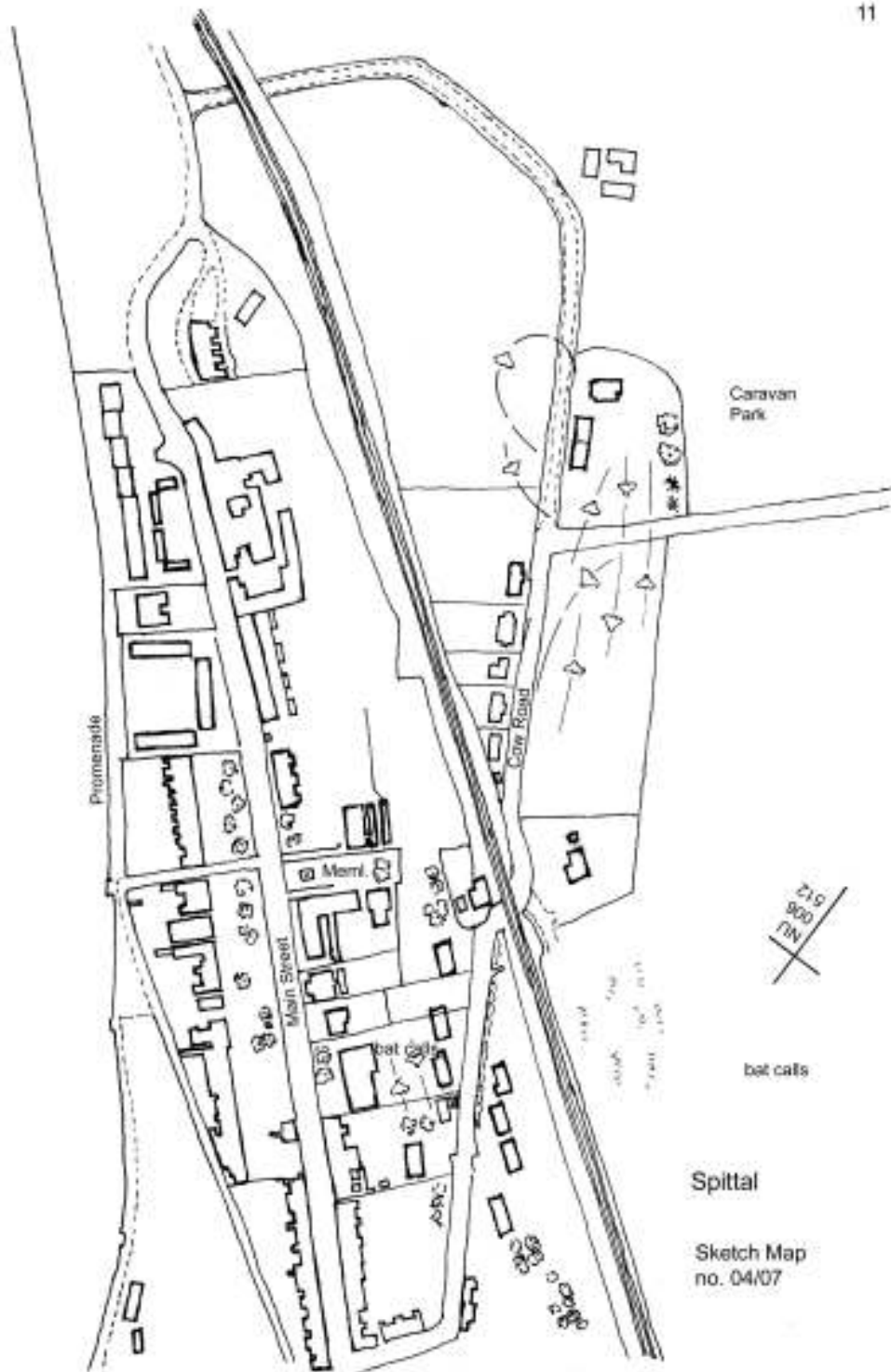
In a further effort to locate the site of a bat roost in upper Ravensdowne, a section of the street was surveyed from the Parade to the double corner below the Barracks.

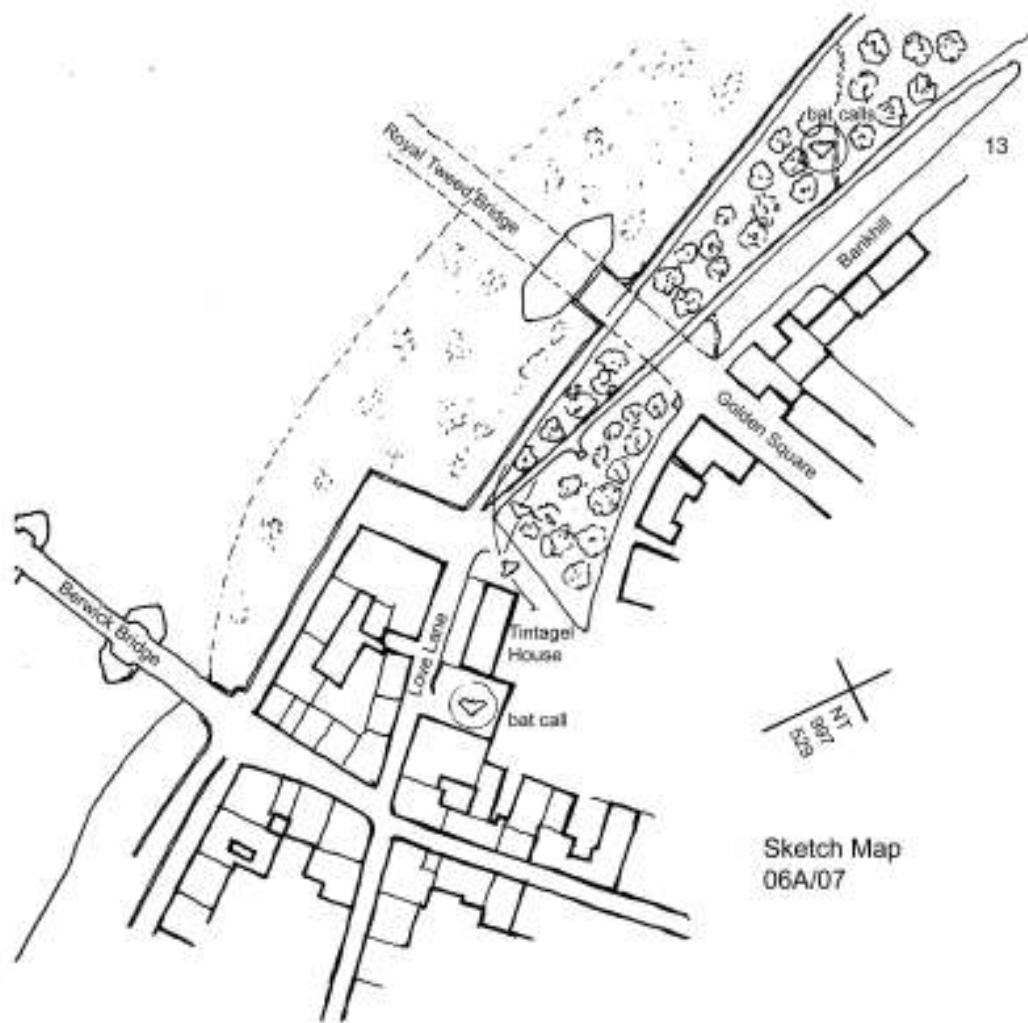
6th Sept A first bat call was picked up in the vicinity of the Drill Hall, seeming to come from the access roadway and gardens behind houses on the Parade. With the permission of one of the householders, surveyors concentrated on the access roadway, and recorded continuous activity beyond the west gable of the Drill Hall and over yards and gardens to the rear of houses on the Parade and Church Street.

The species making the bat calls remains to be confirmed.
(See sketch map no.08/07)

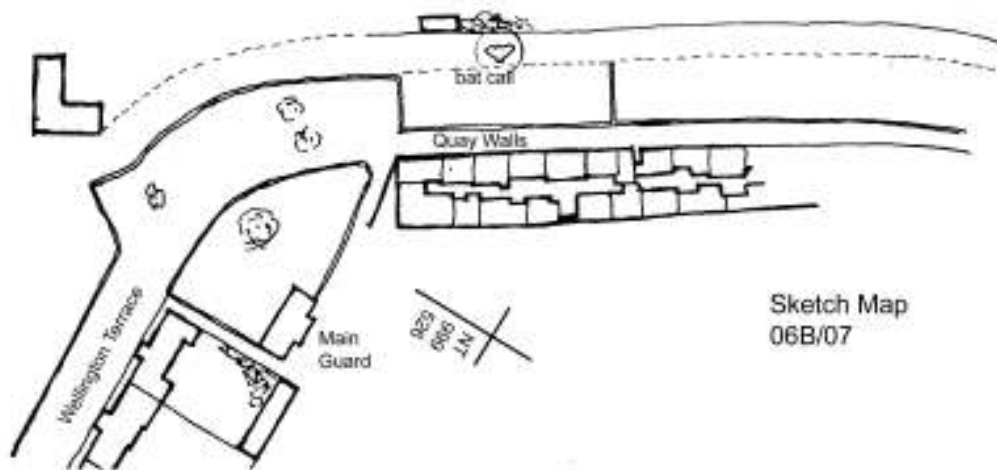


Sketch Map no. 03/07

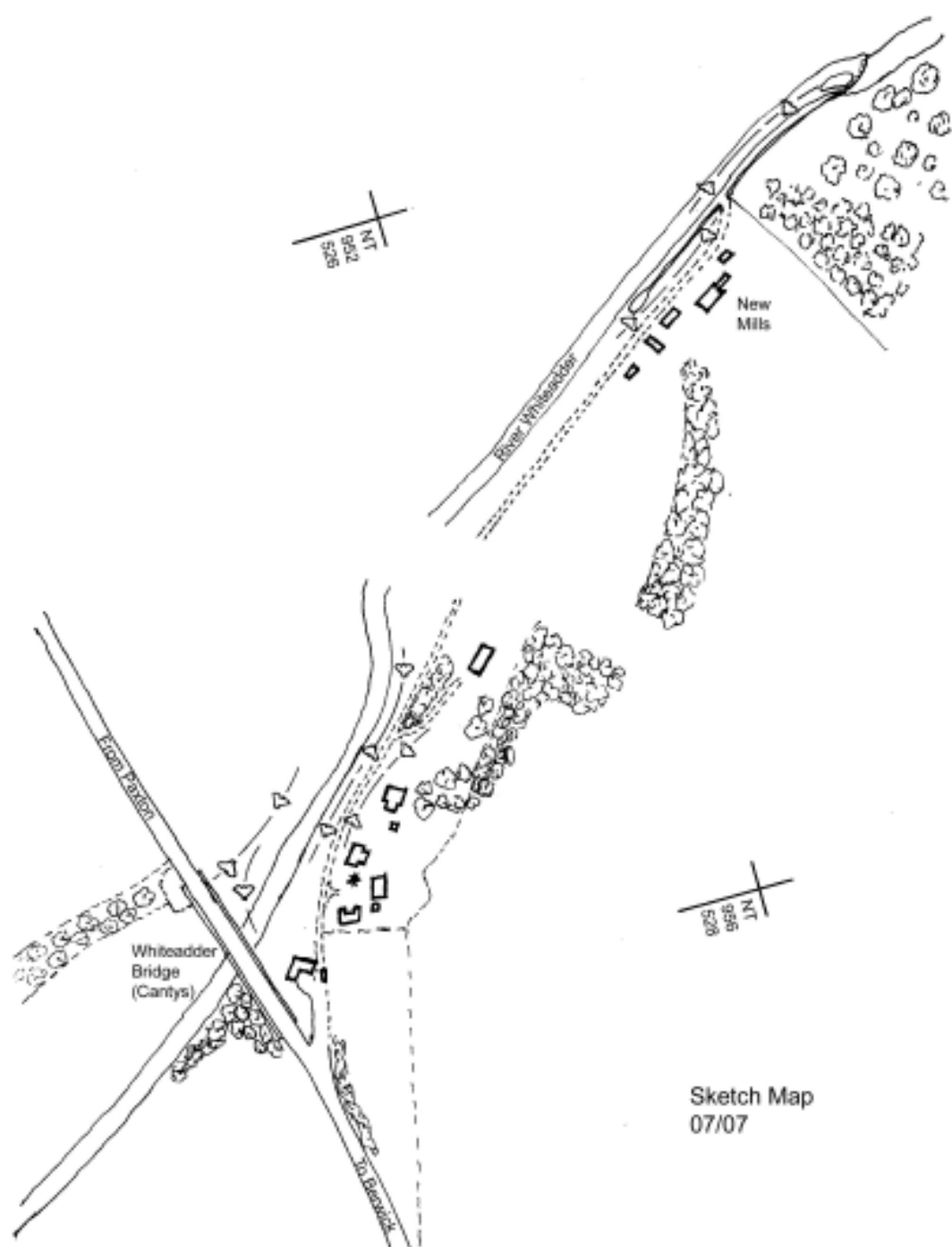




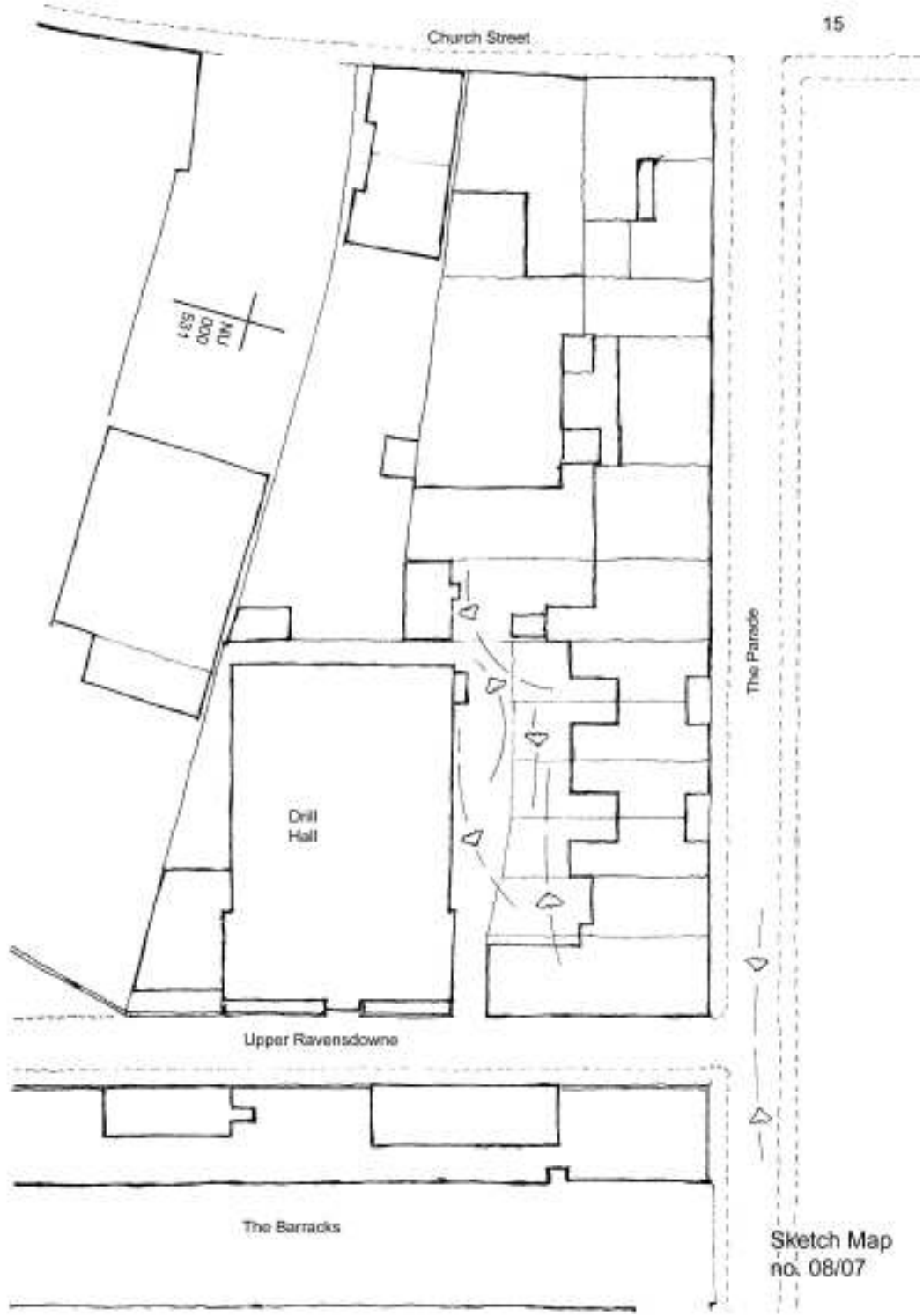
Sketch Map
06A/07



Sketch Map
06B/07



Sketch Map
07/07



Sketch Map
no. 08/07

ANALYSIS OF SURVEY RESULTS

Survey No.1 followed up work from 2006 on the section of the Ramparts from Lion's House to the southern boundary of the Barracks site. Since bat activity recorded along this section appeared to be separate from that noted at the Avenue and Governor's Garden area, and also from that recorded on the Parade and around the perimeter of Holy Trinity Church, it gave reason to believe that a bat roost could exist somewhere on one of the buildings along Ravensdowne. In the event, no bat roost could be located, but the houses from St Cuthberts' Church to the Ravensholme hotel remain to be investigated.

The second survey, a very much larger 'emergence' survey, involved many surveyors, and proved to be useful experience, not least because it showed how frustrating and unrewarding bat watching can sometimes appear. The weather, which was most unseasonable, appeared to be as much of a trial to the bats as to the surveyors.

The purposes of the survey were a) to determine if bats were present; b) if any were present, were they roosting in the buildings being surveyed?; c) if not in the buildings, but in the area, of what importance to them were the buildings?

On the first evening, surveyors were positioned around the perimeter of the steading, essentially to confirm the presence of bats and to plot their flight patterns, and so gain information as to where any roost might be sited. The succeeding surveys were tailored to build on the initial results, surveyors being concentrated at locations where bats had been recorded during the first evening, and to seek to answer the aims, as stated, by a process of elimination. A positive result was achieved.

The third survey, a visit to Summerhill Terrace, and the 'green triangle' next to the railway, was intended to confirm what appeared to be a straightforward 'emergence' survey based on the survey results from 2006. All that was needed was to concentrate on the frontage of the Terrace, and hope that a roost would be discovered. Unfortunately, no one told the bats. Although bats were present in small numbers, all bat activity was centred on the 'green triangle'; the bats gave no clues as to the whereabouts of their roost (seemingly not in the houses of Summerhill Terrace).

The fourth survey, at Spittal, achieved its aim of discovering the presence of bats in new areas. However, it is possible that the bats detected to the west of the Cow Road could be part of a colony that also uses the Spa Well area (surveyed in 2006), as the two locations are separated by no great distance.

Ord House Country Park fulfilled expectations of its being a valuable feeding site for bats, particularly on the eastern, tree lined-boundary with the Cornwall Avenue area. Further survey work will be necessary to determine whether or not bats on the western perimeter are from a different location.

The survey of Love Lane and the lower Bankhill area confirmed the presence of bats, and the survey of the Quay Walls and Wellington Terrace gave no hint that these were connected with bats recorded in the vicinity of the Governor's Garden, in 2006. It is possible, therefore, that the bats located around Love Lane do form a separate colony.

The River Whiteadder survey proved to be a most rewarding experience, enabling most surveyors to hear Daubenton's bat calls for the first time. It was noted during the survey that three bat boxes have been fixed to the upstream edge of the bridge deck, at Canty's, and it will be an interesting exercise for the future to find out if these are being used by the bats.

The final survey of the year marked a return to upper Ravensdowne and, while not achieving the desired result of locating a bat roost, nevertheless provided a most satisfying amount of bat activity that can also be followed up in the future.

APPENDIX

BAT SPECIES

Common Pipistrelle (*Pipistrellus pipistrellus*)

The common pipistrelle, together with the 'soprano' pipistrelle (*Pipistrellus pygmaeus*), is the smallest bat to be found in Britain.

The common pipistrelle has a combined head and body length of 35 – 45 mm, a wingspan of 190 – 250 mm and weighs some 3 – 8 grams. It is usually medium to dark brown in colour, slightly paler underneath.

In their life cycle, common pipistrelles mate in autumn and females establish maternity roosts in late spring; one young (occasionally twins) is born in early June to mid – July, and is weaned at six weeks.

Colonies can range from 25 in number to the low 100s although, exceptionally, roosts of 1000 plus are known. Maternity roosts are occupied between May and September, and most favoured sites are in buildings, frequently less than 30 years old. Hibernation sites are rarely found, most winter records being of isolated individuals or small groups, in crevices in buildings and trees.

Food species consist of midges, caddisflies, mosquitoes, mayflies, lacewings and small moths, and these are taken over water, marshes, in open woodland, woodland edges, farmland, along hedgerows, suburban gardens and urban spaces.

As with all British species, the common pipistrelle uses echolocation to detect its prey, emitting sounds that are normally inaudible to the human ear: the calls range from 40 – 60 kHz, but can be detected using bat detectors.
(Roberts and Hutson, 2003)

Daubenton's Bat (*Myotis daubentonii*)

Daubenton's bat is a medium-sized species having a combined head and body length of 44 – 55 mm, a wingspan of 240 – 275 mm and a weight of 7 – 12 g. Its fur is red/brown, pale underneath and a pinkish face, bare around the eyes.

Daubenton's bats mate in autumn and throughout the winter, and maternity roosts are established in late spring: one young is born, June to early July, and is weaned at six weeks.

Colonies are generally smaller than for pipistrelles, at 20 – 50, but can reach 200. Summer roosts are to be found in trees, tunnels, bridges, caves, mines, cellars and, occasionally, stone buildings. Winter roosts are to be found in caves, mines and other underground sites.

The feeding habitat is normally over lakes, rivers and ponds, and food species are small flies (especially chironomid midges), caddisflies and mayflies.

The bat's ultrasound calls range from 38 – 85 kHz, and peak at 40 – 50 kHz. On a bat detector, the calls are described as being a "machine-gun like series of regular clicks for bursts of 5 to 10 seconds".
(Roberts and Hutson, 1999)

REFERENCES

Roberts, G. M. and Hutson, A. M., 1999, *Daubenton's Bat*. British Bats, 3, Bat Conservation Trust.

Roberts, G. M. and Hutson, A. M., 2003. *Pipistrelle*. British Bats, 6. Bat Conservation Trust.

Walsh, A. and Catto, C., 2004. Survey and monitoring in Mitchell-Jones, A. J. and McLeish, A. P., 2004. *Bat Workers' Manual, 3rd edition*. Joint Nature Conservation Committee.