



Bat Survey (Trapping and Detector) at Greathaugh Valley near Brierley, Gloucestershire 28th May 2016

At the request of the Forestry Commission, members of the Herefordshire Mammal Group and Gloucestershire Bat Group carried out a bat detector and trapping survey at Greathaugh Brook, near Brierley, Gloucestershire, on the 28th May 2016. The survey was intended to obtain records for a special conservation project which is planned for this area in the near future so it was necessary to determine what bat species are using this site before the start of the project. Two teams set up 3 harp traps (all with acoustic lures) and 5 low net systems in close proximity to the brook. Five static bat detectors were spaced equally around the trapping site to record any bats species not captured during the evening. Harp traps and mist nets were opened at sunset and closed after approximately 4 hrs.

All bats captured were identified and processed and their breeding condition was assessed. Species, sex, age, breeding condition, weight and forearm length were recorded for each bat that was processed.



Figure 1: Location of traps and static bat detectors at Greathaugh Brook on 28th May 2016 at OS grid reference SO619155 (HP=Harp Trap, AE=Anabat Express)

WEATHER CONDITIONS

Table 1 documents weather conditions, sunset times, moon rise, moon set and moon phase which should be considered regarding bat activity. Cold nights, a full visible moon and breezy conditions may effect bat activity and catch rate.

Table 1: Weather conditions for trapping at Greathaugh Brook

Date	Sunset (hrs)	Start Temp	End Temp	Cloud	Wind	Dry/Rain	Moon rise/set (hrs)	Moon Phase
28-May-2016	21.16	15.0°C	9.0°C	Cloudy	Calm	Dry	Rise 01.15 Set 11.25	61%, not visible

BAT SPECIES CAPTURED AND DETECTED

Table 2 specifies the number bats caught during trapping, whether adult or juvenile, male or female and their breeding condition. Table 3 documents the key bat calls recorded by five static bat detectors placed around the trapping site. Table 4 provides an overall number of species using Greathaugh Brook. Breeding status of each species is confirmed by determining whether females are lactating or post lactating, whether males are in breeding condition determined by the size of their testes and size and colour of their epididymis and by the capture of juveniles.

Table 2: A total 5 bats were caught during the trapping session at Greathaugh Brook

Species	Number of bats caught	Males	Females	Juveniles
Soprano pip	1	1	0	0
Common pip	1	1	0	0
Whiskered	2	2	0	0
Noctule	1	1	0	0

Table 3: The results from static bat detectors showing emergence/nearby emergence times relative to sunset and other activity.

BAT DETECTORS	SUNSET	TIME	SPECIES	COMMENTS
AE00 - West of car park, on ride facing away from brook (14 files)	21.16	21.36	Common pip	Local Emergence
	21.16	22.16	Noctule	Pass
	21.16	23.33	Noctule	Pass
	21.16	23.03	Myotis spp	Pass
	21.16	23.47-0.03	Noctule	3 passes
	21.16	0.15	Myotis spp	Pass
AE89 - West of car park, positioned at brook facing along brook (89 files)	21.16	21.15	Soprano pip	Local Emergence
	21.16	21.16-21.35	Common pip	Local Emergence and several passes
	21.16	21.25	Noctule	Nearby Emergence
	21.16	21.35-21.38	Soprano pip	Several passes
	21.16	22.06 to 1.13	Barbastelle	8 passes during survey
		22.07 to 1.14	Myotis spp	Several passes throughout survey
		22.17 to 0.03	Noctule	4 passes
		23.19	Nyctalus spp	Pass
AEKK - On east side of Car Park (67 files)	21.16	21.34 to 21.52	Common pip	Local Emergence and several passes
	21.16	21.54	Myotis spp	Local Emergence
	21.16	22.08-23.10	Myotis spp	3 passes
	21.16	22.29	Noctule	Pass
	21.16	23.16	Nyctalus spp	Pass
	21.16	23.44-23-51	Myotis spp	Several passes
	21.16	23.55-0.20	Noctule	Several passes
	21.16	1.11	Common pip	Pass

BAT DETECTORS	SUNSET	TIME	SPECIES	COMMENTS
Bat Logger (Submitted by Robert Pelc) - 129 files, East of Car Park	21.16	21.07 to 22.07	Common pip	Local Emergence and moderate number of passes
	21.16	21:19:36	Soprano pip	Local Emergence
	21.16	21:26:30	Soprano pip	Local Emergence
	21.16	21:41:41	Soprano pip	Pass
	21.16	21:41:44	Soprano pip	Pass
	21.16	21:42:02	Soprano pip	Pass
	21.16	22:10:31	Soprano pip	Pass
	21.16	22:14:01	Soprano pip	Pass
	21.16	22:38:20	Soprano pip	Pass
	21.16	22:50:26	Common pip	Pass
	21.16	22:52:17	Myotis spec.	Pass
	21.16	22:59:12	Soprano pip	3 passes
	21.16	23:31:36	Nyctalus spp (Leisler's)	Pass
	21.16	23:43:58	Nyctalus spp (Leisler's)	Pass
	21.16	23:48:09	Nyctalus noctula	Pass
	21.16	23:50:02	Nyctalus noctula	Pass
	21.16	00:11:27	Myotis spec.	Pass
	21.16	0.14 to 2.18	Common pip	Several passes
	21.16	00:50:17	Soprano pip	Pass
	21.16	01:27:50	Nyctalus spp (Leisler's)	Pass
21.16	01:45:08	Lesser horse-shoe	Pass	
21.16	01:45:11	Lesser horse-shoe	Pass	

Table 4: Bat species using Greathaugh Brook for roosting, as determined from their emergence times relative to sunset and from the breeding status of bats captured.

SPECIES RECORDED	HOW BATS ARE USING AREA AROUND GREATHAUGH BROOK 2016
Common pipistrelle	Roosting locally
Soprano pipistrelle	Roosting locally
Whiskered bat	Possibly Roosting locally
Noctule	Probably Roosting locally
Myotis spp	Probably Roosting locally
Nyctalus spp (Leisler's)	Visiting/Foraging/Commuting
Barbastelle	Visiting/Foraging/Commuting
Lesser horseshoe bat	Visiting/Foraging/Commuting

In May 2016, at least 6 species of bat were confirmed using Greathaugh Valley, near Brierley, Gloucestershire. The number of recording files on each static bat detector was generally low, which suggests that there were very few bats foraging in the area at the time of the survey. The most abundant bat species recorded, particularly from static bat detectors on the east side of the car park, was common pipistrelle. This may have been due to the cold night temperatures, which dropped rapidly to 9°C on the night. It may also be due to the location of the site, a valley setting, surrounded by steep wooded slopes trapping in cold temperatures.

There were eight passes from Barbastelle foraging along the brook, which was most likely just the one bat. There were also several passes from a Noctule and another unidentified *Nyctalus* species (25 to 28 kHz). It was suggested this recording may be Leisler's bat, but as these calls were recorded at a similar time to other typical Noctule pulses, it is assumed the calls were in fact Noctule.