

EchoLocation Location Bats in Churches Survey

Why survey a church?

These fascinating ancient buildings often provide plenty of nooks and crannies for bats to utilise at different times of the year and the surrounding habitat of graveyards and village/ town gardens provide hunting habitat close by.

Churches are now sadly often locked for security, making access difficult for surveying but access can often be arranged and a survey completed at any time of the year. If access into the church is impossible it is still often worthwhile to inspect the porch which is often used by bats as a feeding roost or sometimes as a main access point into the church.

As part of our Heritage Lottery project we have a budget available for the DNA analysis of bat droppings to enable us to identify the species of bat using a church. This project has been designed to be as simple as possible and can be completed by anyone including those without a bat survey licence (but please read the instructions fully to ensure that you do not break the law)

Where shall I survey?

Nottinghamshire comprises 223 Church of England churches. Some have been surveyed by the group before but not for over 5 years and the vast majority have no records of bats at all. Essentially, all but a handful of churches are worth surveying, particularly stone churches in more rural areas, so let us know which ones you would like to do or have already done, and we can send you all you need to collect some droppings

What to look out for?

If possible we would like to know:

A rough estimate of the size of the aggregation of droppings and where in the church they were found. You can collect droppings from more than one location within a single church as multi-species use of churches is quite common. If all the droppings you find look the same then it's probable that only one species is present but if you find other types please collect them. If in doubt collect! We have plenty of sample tubes and will be reviewing which samples to send for DNA analysis once we have a good number collected.

Please **do not** use a torch to look for bats unless you have a Natural England licence to do so. Disturbing bats without a licence would be unlawful.

During your survey you may meet members of the congregation, the vicar or church warden during your visit. They may be interested in what you are doing so please let them know and spread the good word of bats. Please remember to handle the subject sensitively as many church congregations are not as keen on bats as we are for many valid reasons (e.g. problems caused by droppings, urine stains, bats flying during services). If they have specific issues with a bat roost please ask them to request a Natural England licensed Volunteer Roost Visitor visit via the national BCT bat helpline: 0345 1300 228 or direct them to the Nottinghamshire Bat Group, Bat Conservation Trust and Natural England websites. The latter two websites have comprehensive information on bats and churches.

Droppings

Look on the floor, window ledges, beneath curtains, pews, stonework and benches, as well as below where different sections of the church join e.g. the aisles or chancel and nave

Well used churches can be frequently swept, which may remove obvious droppings from the floor and window ledges, but keep looking and you may find some on the walls, particularly near the main entrance into the church.

Staining

Look for signs of staining- urine or body rub; Some churches are lucky enough to still retain extremely old wooden doors, either into the porch or from the porch into the church and these may have gaps around them or show evidence of bat access over many years.

Feeding remains

Look for moth wings which can be found on the floor, caught in cobwebs or on the rough stone work. These are often the remains of yellow underwing moths and can also be associated with droppings. Butterfly remains may also indicate bats but often they have been eaten by other predators such as spiders or birds, or are overwintering insects which have perished.

How shall I gather the data?

Use the form provided to gather information on any bat usage and the location of the droppings. It is also important to gather details about the structure of the church so please be as thorough as possible when filling in the form.

Droppings collection kits are available from Michael Walker, 14 Ramblers Close, Colwick, Nottingham, NG4 2DN. They will also be available at all group meetings and most events or can be posted out (try to avoid this option if possible though). Each kit contains 6 tubes, labels and 2 small envelopes.

Please put each set of samples from a church into one of the envelopes and write on it the name of the church, the location and your name. Each sample tube should also be labelled and given a number. They can be posted to the above address or given in person at one of our meetings or events. Three samples per church should be plenty but please take more if you think that different species are present. There is no evidence to suggest that in the UK bat urine or droppings carry diseases that are harmful to humans but it is recommended that you either wear gloves, use tweezers or clean hands with an antibacterial hand gel after collecting samples. Droppings should not be sent by Royal Mail so please bring them to a group meeting or event. If you are unable to deliver them personally please let us know and we will make alternative arrangements.

It would be helpful if the form is returned by email to echolocationlocation@gmail.com as soon after the survey as possible to enable us to target unrecorded areas and to avoid duplication. Even if you visit a church but don't find any evidence of bats, please return your form. A nil count is still very important to the group's knowledge of the county.

Useful information to give to churches:

The Bat Conservation Trust <http://www.bats.org.uk/> **National Bat Helpline 0345 1300 228**

Nottinghamshire Bat Group <http://nottsbatgroup.org.uk/>

There are links to information about bats and churches here <http://nottsbatgroup.org.uk/bats-in-churches-project/>

A guide to bat droppings and feeding remains

The discovery of droppings at a survey site is perhaps the easiest method to prove that bats have used it as a roost. Bats, being entirely insectivorous in Britain, produce droppings that only contain the indigestible parts of their insect prey. This gives the droppings a crumbly texture unlike mice droppings which become very hard when dry. The size, shape and texture of a bat dropping can help to identify the species that produced it. The situation the dropping was found in, stuck to a wall or below a beam in a barn, can also help with the identification together with any feeding remains that may be present. Pipistrelle droppings are often stuck to walls or windows below the roost entrance whilst those of the Brown Long-eared bat are scattered throughout their roost with concentrations below regular roosting places

The following measurements of droppings are taken from 'Which Bat Is It' by R E Stebbings. The droppings were measured when fresh but air dry. Only species that have been recorded in Nottinghamshire are shown. Particle size can be very difficult to estimate but with practice becomes easier. Most batworkers will have a reference collection of droppings from known species to help with identification. It should be noted that whilst droppings can give a strong indication of the species concerned it is rarely 100% certain.

Species	Particle size	Diameter (mm)	Length (mm)
Pipistrelle	Fine	1.5 – 2.0	7 – 9
Daubenton's	Fine	1.5 – 2.0	8 – 9
Whiskered/Brandt's	Medium	2.0 – 2.3	6 – 9
Natterer's	Medium	2.3 – 3.3	8 – 11
Brown Long-eared	Medium/Coarse	2.5 – 3.0	8 – 10
Leisler's	Medium	2.5 – 3.0	6 – 9
Noctule	Medium	3.0 – 3.5	11 – 15
Serotine	Coarse	3.5 – 4.0	8 – 11

Notes

1. Droppings can vary a great deal in colour from a light brown to black depending on what the bat has eaten.
2. The length of droppings is very variable and certain diets make them more fragile causing them to split into smaller fragments.

Brown Long-eared



Whiskered/Brandt's



Pipistrelle



All droppings above are shown at actual size

Feeding remains

Bats that prey on large insects such as moths will often take them to a regular feeding perch e.g. a church porch or an open barn. The examples opposite were collected from a barn used as a regular feeding roost by Brown Long-eared bats. Often the head of the insect remains as the bat has only eaten the juicy abdomen. Butterfly wings from Small Tortoiseshell and Peacock are often found in these wing collections. Both species enter roof spaces and barns in late summer to hibernate and are easily gleaned by bats. Butterflies are also easy prey for spiders so do not assume that bats are always responsible.



Nottinghamshire Bat Group - BATS IN CHURCHES SURVEY

(an active word version of this form is available from <http://nottsbatgroup.org.uk/?p=521>)

Name of church			
Town or village			
Grid reference			
Name of surveyor/s		Date of survey	
Area surveyed	Porch only <input type="checkbox"/> Church and porch <input type="checkbox"/> Church was locked <input type="checkbox"/>		

Church details:			
Approximate age of church			
Main church wall construction	Brick <input type="checkbox"/> Stone <input type="checkbox"/> Other:	Solid wall <input type="checkbox"/> Cavity wall <input type="checkbox"/>	
Main church roof covering	Lead <input type="checkbox"/> Tile <input type="checkbox"/> Slate <input type="checkbox"/> Other:	Lined with: Underfelt <input type="checkbox"/> Boards <input type="checkbox"/> Nothing <input type="checkbox"/> Unknown <input type="checkbox"/>	
Porch wall construction	Brick <input type="checkbox"/> Stone <input type="checkbox"/> Other:	Solid wall <input type="checkbox"/> Cavity wall <input type="checkbox"/>	
Porch roof covering	Lead <input type="checkbox"/> Tile <input type="checkbox"/> Slate <input type="checkbox"/> Other:	Lined with: Underfelt <input type="checkbox"/> Boards <input type="checkbox"/> Nothing <input type="checkbox"/> Unknown <input type="checkbox"/>	
Cladding	On church <input type="checkbox"/> On porch <input type="checkbox"/> On both <input type="checkbox"/> Details:		

Any information on possible roost access points:

Roost evidence details	
Signs of droppings	In church <input type="checkbox"/> In porch <input type="checkbox"/> No droppings <input type="checkbox"/>
Locations of droppings if found. Also mark on drawing below	
Species if known:	How identified: bats seen <input type="checkbox"/> bat detector <input type="checkbox"/> from droppings <input type="checkbox"/>
Any other evidence	
Staining	Yes <input type="checkbox"/> No <input type="checkbox"/> Location:
Feeding remains	Yes <input type="checkbox"/> No <input type="checkbox"/> Location:
Other (specify)	

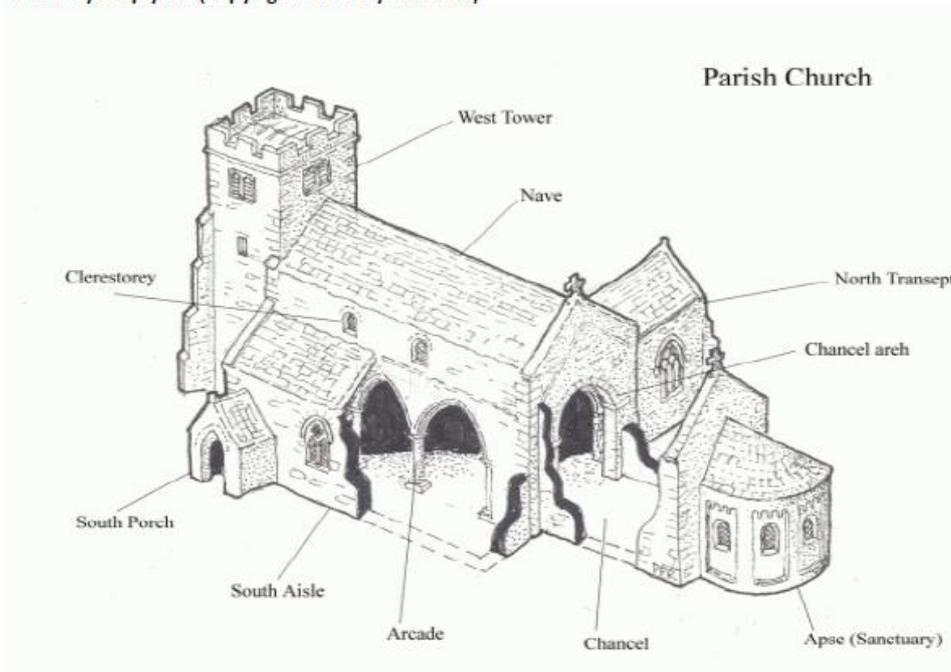
Samples collected for DNA analysis			
Sample number (also marked on tube):		Location collected:	
Sample number (also marked on tube):		Location collected:	
Sample number (also marked on tube):		Location collected:	

Sketch plan (please mark droppings and sample collection points)

If you spoke to anyone at the church and they would like some follow up advice please add their details below:

Any other comments or details:

This may help you! (copyright Peter Ryder 2003)



REMEMBER! Do not use a torch to look for roosting bats unless you have the relevant Natural England licence. Using a torch to look for droppings on the floor is OK though.

Collecting droppings samples

Droppings collection kits are available from Michael Walker, 14 Ramblers Close, Colwick, Nottingham, NG4 2DN. They will also be available at all group meetings and most events or can be posted out (try to avoid this option if possible though). Each kit contains 6 tubes, labels and 2 small envelopes. Please put each set of samples from a church into one of the envelopes and write on it the name of the church, the location and your name. Each sample tube should be labelled and given a number. They can be posted to the above address or given in person at one of our meetings or events. Three samples per church should be plenty but please take more if you think that different species are present. There is no evidence to suggest that in the UK bat urine or droppings carry diseases that are harmful to humans but it is recommended that you either wear gloves, use tweezers or clean hands with an antibacterial hand gel after collecting samples.

It would be helpful if the form is returned by email to echolocationlocation@gmail.com as soon after the survey as possible to enable us to target unrecorded areas and to avoid duplication.