

8. The bat is flying very closely to a treeline, wall or hedgerow, or perhaps along a forest track but you do not hear anything on your bat detector unless you tune in around 110kHz and are very close to the bat. At 110kHz you hear a warbling sound. You are in County Cork, Kerry, Limerick, Clare, Galway or south Mayo and are unlikely to be in an urban area.

Yes – Lesser Horseshoe Bat



No – Go to 9

9. The bat has a similar flight style to 7 above or is hovering close to tree or shrub vegetation. When you tune to 35kHz you hear a very quiet, fast repeating echolocation call that sounds very similar to the sound you hear at 50 or 60kHz. The bat is so quiet that it needs to be within maybe 5m or you cannot hear it. If you have a very good view, or see it silhouetted against the sky you see its very long ears. You are in an area with good numbers of trees.

Yes – Brown Long-eared Bat



No – Go to 10

10. The remaining three bat species can be very difficult to tell apart. Your bat has a very white underbelly, a hovering flight style, its echolocation calls have a very fast repetition rate and sound the same when tuned from 30kHz up to 100kHz. The Natterer's bat sounds like the Daubenton's bat, only quieter. You are in an area with trees and/or white water.

Yes – Natterer's Bat



Although note that Natterer's bat can be difficult to distinguish from the brown long-eared (9 above) when foraging. The Natterer's bat is more likely to land on the ground to forage than the brown long-eared bat and is also sometimes associated with white water areas of fast flowing rivers. Natterer's bat has slightly louder echolocation calls.

No – Go to 11

11. The echolocation calls have a fast repetition rate and sound very similar to the Daubenton's. They are generally loudest around 35-40kHz. However, the bat is not flying low over water, often preferring forest tracks and woodland. This bat follows a very regular beat when flying. The echolocation calls usually fade out when you tune to 90kHz or thereabouts.

Yes – Whiskered/Brandt's Bat



These two remaining species cannot be distinguished on the basis of echolocation calls or flight styles.

No

If none of the above points, 1-11, have described your bat please enter Unidentified in your recording form.

BAT MONITORING PROGRAMMES

Volunteers are welcome to participate in Bat Conservation Ireland's monitoring programmes. Please register through our website www.batconservationireland.org.

BATLAS 2010

This programme involves random surveying of suitable habitats for bats within an assigned 10km square using a bat detector. Surveying is undertaken on mild, calm and warm evenings/nights when bats are actively foraging (April to October months are generally the most suitable periods). Volunteers are requested to visit suitable habitats (e.g. bridge over a waterway) and survey for the following bat species: common pipistrelle, soprano pipistrelle, Leisler's bats and Daubenton's bats (over waterbodies).

ALL IRELAND DAUBENTON'S BAT WATERWAY SURVEY

This programme is the most suitable programme for beginners to join in. Volunteer teams (minimum two people per team) are assigned a waterway site within 10km of their home address and are required to undertake two survey nights in the month of August. Volunteer teams survey 10 survey spots for 4 minutes per survey spot recording the Daubenton's bat only using a bat detector and torch. The characteristic flight pattern of this species as it skims the water surface makes it very easy to identify this species in flight.

BROWN LONG-EARED ROOST MONITORING PROGRAMME

This programme involves emergence counts of known brown long-eared bats. Volunteer teams assist with counting the bats as they emerge from the roost.

CAR-BASED BAT MONITORING PROGRAMME

This unique bat monitoring scheme is a method of monitoring bats while driving. For this scheme, time expansion detectors are used, which essentially make short recordings of a broad range of ultrasound and replay the sounds at a slower speed. The monitoring is carried out along mapped routes, at a specific time of year (one night in July and one night in August), while driving at a prescribed speed. Volunteers do not require any past experience with bat detectors. Volunteers are sought to drive mapped routes, read maps and to work equipment.

Descriptions of bat sounds as heard through a Heterodyne bat detector

Bat species	Description	Detection frequency	Flight pattern
Soprano pipistrelle	Pip Pop or slaps	52 - 56+ kHz	Rapid, agile swoops
Common pipistrelle	Pip Pop or slaps	42 - 48 kHz	Rapid, agile swoops
Nathusius' pipistrelle	Slaps (slower beat)	38 - 41 kHz	Rapid, agile swoops
Whiskered/Brandt's	Rapid dry clicks	35 - 65 kHz	Agile, straight-line flight at head height
Natterer's bat	Rapid dry clicks	30 - 100 kHz	Agile and maneuverable swoops
Daubenton's bat	Rapid dry clicks	35 - 70 kHz	Flies within 30 cm of water surface
Lesser horseshoe bat	Warbling call	110 - 113 kHz	Fast flight close to the ground
Leisler's bat	Chip chop, very loud	22 - 28 kHz	Fast flying above tree tops
Brown long-eared bat	Quiet crackling noise	45 kHz	Slow fluttering flights

Forearm Length (cm)	28-35	28-35	32-36	33-40	36-43	30-38	36-40	39-47	34-42
Habitats	SP	CP	NP	Daub	Natt	Wh/Br	LHB	Leis	BLE
Open grassland	●	●						●	
Treelines / hedges	●	●	●		●		●	●	
Woodland rides/edge	●	●	●	●	●	●	●	●	●
Woodland	●	●			●		●		
Waterways	●	●	●	●	●	●	●		●



*Irish Bats
in Flight*



IDENTIFICATION CARD



Comhshaol, Oidhreacht agus Rialtas Áitiúil
Environment, Heritage and Local Government

BATLAS 2010

Bat Conservation Ireland's National Bat Distribution Atlas Programme

This identification card is designed for use with a heterodyne (tuneable) bat detector (e.g. Magenta, Bat Box III, Pettersson D100 etc.). We recommend that you **try to observe the bat in flight** as well as **listen on the bat detector**. This identification card is by no means the definitive guide to flight styles or echolocation calls of the Irish bat species, it is merely meant to supplement the training and other courses you have already attended and to help you build in confidence at identifying bats in the field.

In very many cases bat identification can be difficult to establish definitively. If you are in any way unsure about the identification of a particular bat **PLEASE enter 'Unidentified' in the species box of your recording sheets**. This will mean that the data you collect is much more accurate than it would otherwise be.

Your tutor will have explained some of the simple terms used to describe bat sounds such as low and high frequency, repetition rates etc., during your BATLAS 2010 training course. It is important to **continuously move the dial on your tuneable bat detector*** to increase the number of potential bats you will encounter, and to familiarise yourself with the way bats sound at different frequencies. Many species' echolocation calls overlap and it is not possible to tune in to one frequency and assume just one bat species will echolocate at this frequency. For pipistrelles, however, it is possible to tune in to a correct frequency, see over.

Notes on tuning in to the correct frequency:

- When listening to the bat's echolocation calls turn the tuning dial on your detector and note if there is a change in pitch.
- Rotate the dial towards the lower pitch.
- Stop when the calls sound deepest. If, however, as you move the dial the pitch (**NOT loudness**) does not change and the calls seem to be of short duration, you are probably observing a Myotis Bat (whiskered, Brandt's, Daubenton's or Natterer's) OR a Brown Long-eared Bat OR a bat flying in a cluttered environment.

NB: Bats in photographs are not to scale.

BAT IDENTIFICATION KEY

Follow the key below until you come across a statement that holds true for your situation and the bat you can see:

1. The bat is flying low over water.

Yes – Go to 2

No – Go to 3

2. The bat is flying close to the surface of the water, perhaps occasionally touching the surface, and when tuned in at 35kHz sounds like regularly firing machine gun (regular repetition rate). Then, when the bat is still in range i.e. (visible and audible) and you move the dial up to 55kHz – 70kHz, the sound remains more or less the same.

Yes – Daubenton's Bat



No – Go to 4

3. The bat is flying at a height of 20m or higher, is clearly visible and could potentially be mistaken for a swift if there is still some available light, and/or echolocation sounds like a series of chi – chi – chi – chop – chop sounds when tuned to 25kHz on the detector (note much slower repetition rate compared with all other Irish species). You may be in an urban or rural area.

Yes – Leisler's Bat



No – Go to 4

4. The bat is flying around hedgerows, treelines, stone walls or along a river bank, typically at a height of around 2-6m but not sticking to that height. You may be in an urban or rural area. Very agile bat with many twists and turns in flight. When tuned to 45kHz the echolocation calls sound like they are at a lower pitch than if you tune in at 55kHz, or 35kHz, for example. Echolocation calls have an irregular but fast repetition rate (compared with Leisler's bat above).

Yes – Common Pipistrelle



No – Go to 5

5. The bat is flying in a similar situation to 4 above, with a similar flight style but when tuned in to 45kHz the sounds are at a higher pitch than when tuned in at 55kHz. At 55kHz the sounds are lower pitched. Echolocation calls have a fast but irregular repetition rate similar to 4 above.

Yes – Soprano Pipistrelle



No – Go to 6

6. The bat appears to have the characteristics of either the common, or soprano, pipistrelle bat, 4 and 5 above, but the echolocation calls are deeper/richer sounding at 50kHz.

Yes – Pipistrellus species unknown, but could be common or soprano pipistrelle species

No – Go to 7

7. The bat sounds like a pipistrelle (4-6 above) but its echolocation calls are at their lowest pitch when tuned in at 38-39kHz. The echolocation calls have a slower repetition rate than the common and soprano pipistrelle bats, above. This bat may be flying in the vicinity of a river, lake or other water body and may be flying higher and along a more regular flight path than the common or soprano pipistrelles.

Yes – Nathusius' Pipistrelle



No – Go to 8

All photographs by Frank Greenaway

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